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THE RIGHT OF CHEMISTS AND DRUGGISTS TO PRESCRIBE.

In our last impression we laid before our readers a legal opinion upon the questions, so important to the trade, as to the right of Pharmacists to prescribe for their customers. The opinion which we obtained for this purpose, has, we are glad to remark, excited the attention, generally favourable, of our contemporaries. The *Pharmaceutical Journal*, which in one of its earliest volumes devoted much attention to this topic, quotes our case as submitted to counsel, together with the opinion, in the following terms of approval, of which we acknowledge the politeness: "The proprietor of that publication" (our own) "has gone to the expense of obtaining a counsel's opinion with reference to the right of Chemists and Druggists to prescribe, and the case is so fairly stated, and the opinion so entirely in accordance with the views set forth in our pages, that we give here the questions and opinion for the benefit of our readers." After which the former follow in due course, and the editor reprints an extract from his own journal for July, 1855, which we in turn extract in another column, for the benefit of our own readers.

The *Medical Times*, which upon our announcement of our intention to take legal advice, intimated a somewhat jealous intention of keeping an eye on our next article, quotes also our questions, and Mr. Chitty's replies thereto, which it in no way seeks to impugn. The editor, however, gives, as his own opinion, that "as counter-practice supplies an acknowledged want, and is legal within certain bounds, that the only plan of diminishing it can be by supplying the public with genuine medical advice, on easy terms for ready money. . . . At all events, in this country, if any legal and popular custom be mischievous, it must be supplanted by a better one. It is in vain to hope for prohibitive Acts of Parliament." The editor of the *Medical Times and Gazette*, like his brother of the *Pharmaceutical Journal*, acknowledges the source whence he obtains the questions and opinion.

The *British Medical Journal*, in alluding to the articles and letters which have recently appeared in our pages, thinks that "the combination on the part of the chemists to claim the right of practising medicine, may be fairly met by a counter-combination on the part of the profession." This journal has not yet quoted Mr. Chitty's opinion.

The *Lancet* reprints the opinion, with no further introduction than this: "Mr. Chitty has given the following opinion as to the rights and privileges of chemists and druggists." Here follows the entire opinion, with no further acknowledgment in any way whatever, of the source whence the *Lancet* obtains its quotation. Now, this is a matter lying not between the two classes of industrious and learned gentlemen, of whom the *Lancet* and our own periodical profess to be the organs, but between the editors and proprietors of the two publications, as a matter of common fairness and honesty.

The two others which we have cited, have had the civility to mention our paper as that from which the extract is quoted. They, and all other respectable organs of the kindred professions, are heartily welcome to any information in our power to bestow, especially any of a kind to tend to a good understanding and unity in so good a cause as that of humanity. Were our own circulation or influence far beyond those of any one other respectable journal connected with medical matters, we should have no hesitation whatever in quoting from that journal, upon such terms, any item of intelligence likely to be of interest or importance to our readers. The *Lancet* has a perfect right, and certainly our full permission, to ignore our existence altogether. But if the *Lancet* choose to exercise such right, why take from our pages special matter, which can only have been honourably obtained by being paid for at a special price, proportionate to the magnitude of the interests which it concerns? There is a kind of aristocratic pride which inspires even those whom it offends with a kind of respect. There is also a false conceit sometimes displayed by one's moral and social inferiors, which one can pass by and heed not. But to think of a man "cutting" another contumeliously, and picking his pocket at the same moment, is a matter which, while it would make some folks angry, must strike others as ludicrous. We should prefer to regard such affront rather under its ridiculous aspect. But after all, the introduction in the *Lancet* may have been the mere work of the "scissors and paste" man, and the omission of a fact, of which the mention was due alike to courtesy and common honesty, may have been an inadvertence, for which an honourable amends may yet be made. If we happen to be in error in such a charitable construction of the affair, we should much prefer to be wrong on this side than right in an imputation of any less honourable motive.

The *Lancet*, however, reflects upon the arguments conveyed in Mr. Chitty's opinion. It says, "It must be remembered, however, that it has been decided in a court of law that what is called 'counter-practice' is illegal, and a druggist was nonsuited *who sought to recover charges for prescribing* for a patient across the counter." The italics are ours. Now, Mr. Chitty's words are, "The advice . . . cannot, of course, be made the subject of a charge." Says the *Lancet*, "Mr. Chitty evidently is ignorant of what constitutes 'counter-practice,' as carried on to a great extent in this country." We might, from personal knowledge, were we so disposed, utterly, and at length, refute this imputation of ignorance. We could, if we thought necessary, and if our ideas of the license of journalism would permit, refer to consultations upon this matter to substantiate, triumphantly, this refutation. We, however, would rather quote from our impartial contemporary, the *Pharmaceutical Journal*, upon this point. It is there stated, "Of course, the term 'counter-practice' is used in the sense defined in the context."

The *Lancet*, in reference to the alleged decision "in a court of law," asks, "Is Mr. Chitty's opinion the correct one, or must we regard the judgment lately given in a county court as the real exposition of the law? We incline to the dictum of the judge."

In the first place, we reply that, according to our views, as above set forth, the judgment and opinion do not appear to be at variance. Secondly, if they did so—as might happen, were the facts of the county court judgment detailed more explicitly than we have at present the opportunity of finding them—we should not attach more weight to the judgment, as such, than to the opinion we have published. Every lawyer, many editors, and a large proportion of the public, know that county court judgments, not unfrequently delivered by a single gentleman by scores in a day, bear no weight as precedents, and are not ordinarily quoted in our courts. With all due deference to county court judges, we think they would scarcely arrogate to themselves any weight for their decisions beyond that bearing immediately on the matter in hand. Nor are these gentlemen ordinarily selected from our most

celebrated jurists. On the other hand, the "opinion" carries with it its own intrinsic value by its evident terseness, lucidity, and logic, while the name of the gentleman by whom we are favoured with it is one which has long been respected by our most able practitioners, and one which is sufficiently eminent to ensure consideration in any court of judicature within the realm.

We again cordially commend this opinion to our subscribers and to the great body of Pharmacists—trusting, nevertheless, to their prudence and good sense to avoid any collision, which might be so injurious, not only to both but to the public, especially to the poor—as one between the medical practitioners and the chemists and druggists of the kingdom.

RETROSPECTIVE AND PROSPECTIVE.

TWELVE months ago the subscribers to the *Chemist and Druggist* were taken into the editor's confidence, and informed of the general arrangements that had been made for the volume which the present publication completes. The promises then made to the reader have been faithfully carried out, and the editor cannot help feeling rather proud of the work which has been performed under his superintendence during the year. A glance at the index issued with this number will suffice to convince the reader, that the energy which has been thrown into the management of the journal has produced most important results. Besides a number of original leaders and essays, the monthly trade reports and notices of passing events, lists of patents and letters from correspondents, the volume contains many articles which give it a lasting value as a work of reference. To these articles we point with no small degree of satisfaction, as they are from the pens of gentlemen who rank high in the world of science and letters.

The series of papers on Quantitative Analysis, by Dr. Henry M. Noad, F.R.S., give the best, latest, and most trustworthy methods of performing analyses of lime-stones, clays, iron-ores, natural waters, soils, and manures. The author has described new analytical processes devised by himself, as well as those in general use, and has detailed operations which are not usually treated of in works on analysis. Thus, in one of his papers he describes the action of water upon lead, and gives practical directions for estimating the amount of that metal in solution; and also enters fully into the particulars of Clark's beautiful process for determining the degree of hardness. These papers will therefore be acceptable to the analytical chemist, even though he be provided with the ordinary handbooks.

Those who have studied Botany, that science of beautiful objects and hard names, will have discovered that the papers on the Natural Orders of Plants are by a gentleman having a very deep knowledge of the subject, and all will appreciate the clearness with which the general characters of each order are described, and the admirable way in which the most interesting genera are arranged. To a student preparing for an examination in botany these papers will prove invaluable.

The alphabetical list of Photographic Chemicals, by Mr. C. W. Quin, is another important feature of the volume. This list, which is completed in the present number, includes almost every article required by the photographer. It has been prepared expressly for the dealer in photographic chemicals, who has hitherto had to consult expensive and diffuse manuals, in order to ascertain what salts and preparations ought to be kept in stock. To every pharmacist, whether dealing in the articles enumerated or not, Mr. Quin's contributions will be of great value, as they give the best modes of preparing a great number of pure chemicals, with full particulars of their properties and uses.

In our Notes of Novelties, numerous interesting and useful inventions have been

described and figured during the year. Most of the articles included in this department are by Mr. W. B. Tegetmeier, who is well known as a lecturer and writer upon domestic economy and the useful arts.

Among the many original essays which appear in the pages of the present volume, we may especially refer to those upon Sponges, Lint, the Microscope, and the Aquarium, written by a gentleman who professes merely to touch upon his subjects, but who really goes quite deep enough even for scientific readers, as the articles we have mentioned have been reprinted in most of the technical journals of America. We could also point to several articles on new remedies, which have been largely quoted by our English and Foreign contemporaries.

We trust we shall not be accused of vain boasting if we take credit for having served the trade generally, by our thorough investigation of the legal rights of pharmacists respecting counter-practice. We received many letters on the subject, and we felt that, from our position as the recognised organ of the trade, it was our duty to spare no expense or trouble to settle, as far as possible, what the rights of pharmacists were. Our articles, and the legal opinion which we published last month, have, as will be gathered from our first leader, created no little stir in the medical profession. We may also take some credit for having exposed a system of fraud which has long been carried on by carriers, and for having shown our readers how to deal with cases of over-charge on parcels.

In looking back, therefore, we find that we have done quite enough to earn the confidence of our readers, and we can, consequently, now look forward with the full assurance of the support of the trade.

Next year the International Exhibition will be the all-absorbing subject of conversation, unless, indeed, grim War arises, and prevents us paying proper attention to the arts of Peace. However, whether Peace or War be dominant, we have determined to devote considerable space to articles upon the Great Show of the World's Industry. All those features of the Exhibition which will be especially interesting to our readers, will be described in a series of papers by Mr. C. W. Quin, who, as Superintendent of Class 2 (Chemical and Pharmaceutical Products), is eminently qualified for the task he has kindly undertaken. Moreover, we have made arrangements with Mr. Robert Hunt, F.R.S., who is also connected with the Exhibition as Superintendent of Class 1 (Mining and Metallurgy), to contribute articles to our pages. We must consider ourselves fortunate in having succeeded in adding this eminent man of science and brilliant writer to our staff.

The papers on the Natural Orders of Plants will be continued, and the author will contribute from time to time separate articles on new medicines. He will also attend to all queries relating to pharmacy and materia medica.

We may here state that it is our intention to devote more space than heretofore to the department of Notes and Queries. The great length of some of our serial articles has often compelled us to slight many of our information-seeking correspondents. Indeed, there has scarcely been a number published during the year in which we could find space for answers to one half of the queries received. When our volume commenced, we had no idea that we should be so often appealed to for information, and we did not allow for the space which experience now tells us is absolutely required for the full development of this highly important department. With regard to all legal queries, we have determined that in future they shall be carefully considered and answered. Mr. Worthington Evans, of the firm of Evans and Phillips, the well-known solicitors of Coleman Street, London, has kindly consented to examine all such queries for us, and to supply the information required.

The department of Notes of Novelties will still remain under the able direction of Mr. W. B. Tegetmeier. It will, however, be greatly expanded, and the most

striking novelties in the way of apparatus in the International Exhibition will be noticed.

The Patent department will undergo a complete alteration. Instead of a mere list each month, short abstracts will be given of the specifications of the most interesting patents, so that the reader may understand the nature and character of each. This department will be managed by Mr. R. A. Broöman, the editor of the *Mechanics' Magazine*.

A series of articles, giving the best formulæ for the preparation of Photographic Baths, Solutions, and Papers, will be communicated by the author of Photographic Chemicals.

We need not enter more fully into our arrangements for the future, and will merely add, that our leading articles will be from well-practised pens directed by well-balanced minds.

THE RIGHTS OF CHEMISTS AND DRUGGISTS.

THE following extract from the *Pharmaceutical Journal* of July, 1855, bears upon the subject which we have taken such pains to elucidate:—"Those who take advantage of any apparent laxity in the restrictive operation of a law, and exert their utmost ingenuity, while keeping within the letter, to violate its spirit and intention, are not advancing the interest of the class to which they belong. On the contrary, they may unintentionally produce an effect directly opposite from that which they desire, by affording practical proof that the law is not sufficiently stringent, and thus giving a pretext for the introduction of one which may be less easily evaded. For example, we have frequently had occasion to resist the attempts which have been made to define the limits between the functions of the Apothecary and those of the Pharmaceutist, in such a manner as to be injurious to the latter class; and it is now generally admitted, that some discretionary power must be conceded to the public, as well as to the members of our own body, in determining where the line shall be drawn. The Pharmaceutical interest is concerned in proving that the confidence thus reposed in its members is not misplaced, and that no further restrictions are necessary. Those Chemists who endeavour to sail as near the wind as possible, who have '*consulting rooms*,' who '*prescribe gratis*,' and (whether on their own premises or not) *perform all the functions of medical men*, are not the friends of their class. They may be compared to schoolboys, who are allowed to walk through an orchard with the understanding that they may take a few windfalls from the ground; but not satisfied with this privilege, some of them take advantage of the opportunity to strip the trees, and thus cause the door of the orchard in future to be closed against their companions and themselves, or only opened under much more strict regulations."

THE WATERS OF VICHY.

THE little town of Vichy, made notorious by the healing of its waters, is situated in the department of the Allier, France. Within its compass it has seven mineral acidulated springs, three of which are allowed to have extraordinary properties and qualifications; they are the Grande Grille, l'Hopital, and the Celestine Springs.

They are proved to contain, in addition to a number of minor ingredients, carbonate of soda, carbonate of lime, carbonate of magnesia, chloride of sodium, sulphate of soda, protoxide of iron, carbonic acid, &c. The Waters of Vichy undoubtedly deserve the first rank amongst the beneficial waters of France. The great preponderance of carbonate of soda which enters into their composition renders them very efficacious in cases of gravel and stone. Their action is marked and rapid upon the urinary organs, causing perspiration by rendering them alkaline, at the same time giving promotion to the general circulation.

The Waters of Vichy are valuable auxiliaries in a long list of the ills which flesh is heir to, viz., abdominal obstructions, gout, rheumatism, cramp in the stomach, &c., &c. The quantity taken varies from a beaker to two tumblersful, either in its pure state, or mixed with wine, syrup, &c.

A.

ANALYSIS OF MANURES.

BY DR. HENRY M. NOID, F.R.S.

BONES.

It is some fifty or sixty years since bones began to be introduced in large quantities into this country from the Continent, and especially from the north of Europe. They have since been constantly growing in repute as a manure, and large tracts of our high lands have long been almost dependent upon them for the means of profitable cultivation. The vast importations of guano during the last twelve or fifteen years have scarcely checked the demand for them, and it is highly probable that their use will hereafter receive a very large development. Bones differ slightly in composition in different animals; they vary also with the age of the animal, and with the part of the body from which they are taken. The bones used in agriculture are chiefly those of cattle. The following composition of the bones of the cow represents very nearly that of a *genuine* sample:—

Organic matter (gelatine)	33.25
Phosphate of lime	55.50
Phosphate of magnesia.....	3.00
Carbonate of lime	3.75
Soda and common salt.....	3.50
Chloride of calcium.....	1.00
	100.00

But bones are met with in commerce in other forms, in which their organic matter has been extracted, either by boiling or by burning; the latter is very common in the form of the spent animal charcoal of the sugar refiners, which usually contains from 70 to 80 per cent. of phosphate of lime. It was formerly considered that the efficacy of bones as a manure depends solely on the quantity of phosphate which they contain, but the benefit derived from the nitrogenous constituent, which in the soil eventually takes the form of ammonia, is now fully recognised. The gelatine or organic part of bones consists of—

Carbon	50.37
Hydrogen	6.33
Nitrogen	17.95
Oxygen	25.35
	100.00

So that supposing this animal substance to be decomposed in the soil, the quantity of it in 100 lbs. of dry bone is sufficient to produce upwards of 6½ lbs. of ammonia, as much as is present in 20 lbs. of sal ammoniac, or in 30 lbs. of crystallized sulphate of ammonia. Liebig has, indeed, advanced the opinion that the ammonia of the atmosphere will give nitrogen enough to the plant, provided the soil be sufficiently supplied with the *mineral matters* which it requires, but it is well known that the exhausted stiffening liquor for calicoes, which, in Manchester, is largely made from bones by boiling them under pressure, has been applied as a liquid manure to grass lands with the greatest success. Some years ago, at the suggestion of the late Professor Johnston, a series of experiments was made in Scotland to test the relative value of burnt and unburnt bones, and the general results were these:—

1st. That *whole* bones under favourable conditions seldom fail in raising an average crop of turnips.

2nd. That burnt bones in equivalent quantity do *not* always succeed in raising an average crop.

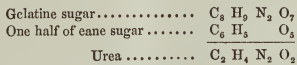
3rd. That when to the burnt bones a sufficiency of organic matter in the form of farm-yard manure was added, then burned bones produced the usual effects of whole bones. The farmer's surest reliance will therefore be on entire bones, especially if there be a deficiency of organic matter in his soil.

If we compare the composition of bones with that of certain varieties of guano, we find a striking analogy between them. As applied to the land in their crude state, bones contain

about 18 per cent. of water; the guano from Ichaboe contains from 20 to 25 per cent. The following table is extracted from "Contributions to Scientific Agriculture," by the late Professor Johnston, the compositions of the Ichaboe guano being the approximative average of several hundred samples analysed in his laboratory. At the same time it must be remembered that the Saldanha Bay and Bolivian guanos contain double the amount of phosphates, and a proportionately less quantity of organic matter.

	Bones.	Guano.
Organic animal matter.....	33 ..	56
Earthy phosphates	59 ..	26
Carbonate of lime	4 ..	6
Salts of soda	4 ..	10
Salts of potash	traces ..	traces
Siliceous matter.....		2
	<u>100</u>	<u>100</u>

Thus we see that bones and guano contain essentially the same things; there is an organic part in both, and both contain a large percentage of phosphates. The organic matter in guano (chiefly oxalate and carbonate of ammonia) is in larger proportion than in bones, but the proportion of ammonia yielded by this organic matter is not probably on an average much greater; while in bones the amount of phosphates is considerably greater. *Weight for weight*, therefore, bones ought to have an effect in fertilizing the land equal to, if not superior, to that of Ichaboe guano. But in practice it is not found to be so, and the reasons are—Firstly, that the *mechanical conditions* of the two manures are different, the one being a tough coherent substance, and therefore very slowly decomposed in the soil, while the other is an impalpable powder; and secondly, that the organic matter in the guano is mostly in a *soluble* form, and consequently readily taken up by the roots of plants, whilst in bones the organic nitrogen-yielding substance, namely, *gelatine*, is very sparingly soluble in cold water, and must undergo a chemical change before it becomes available for the requirements of the plant, and this is a work of time. The action of bones is *slow*; that of guano *immediate*. To quicken the decomposition of bones in the soil various expedients have been resorted to.—1st. By reducing them to as fine a powder as possible. 2nd. By fermenting them, either alone or with farm-yard dung. 3rd. By dissolving them in sulphuric acid. This latter method is the most effectual. The bones, either in the form of dust or in fragments, are mixed with half their weight of boiling water, and then with half their weight of oil of vitriol, poured slowly in; a powerful boiling up or effervescence at first takes place, which gradually subsides. By occasional stirring the whole assumes the appearance of a thick paste, and after a week or ten days the whole may be taken out, and mixed with a little saw-dust, charcoal powder, charred peat, or fine dry earth, to make it dry enough to pass through the drill, and may thus be immediately applied to the land; or the acid solution may be mixed with from fifty to a hundred times more water, and thus diluted may be applied by a water-cart. This mode of applying bones in the liquid form is, no doubt, the most perfect, though unfortunately the most troublesome and expensive. By the action of sulphuric acid the bones are made to undergo an important chemical change. The organic portion—the *gelatine*—is not only rendered soluble, but it is decomposed, and new compounds are produced, which are readily soluble in water. Amongst these is *gelatine sugar* ($C_8 H_9 N_2 O_7$), *gelatine* itself being $C_{13} H_{10} N_2 O_3$; and it is worthy of remark, that if we subtract from the formula of *gelatine sugar* one half of that of *cane sugar*, we have *urea*, thus:—



And urea in the presence of water is readily converted into *carbonate of ammonia*—the only form, in the opinion of some eminent chemists, in which nitrogen can be introduced into the plant. The action of sulphuric acid might, doubtless, be brought to bear in a similar manner upon other refractory organic substances, and convert them into valuable manures. The parings of *horn*, of *skins*, the *leather* parings of the shoemakers, *old shoes*, and *old hats* might

easily be worked up in this way, wool and leather being both richer in nitrogen than their own weight of dried fish or flesh. The action of sulphuric acid upon the inorganic matter of the bones results in the production of three changes:—1st. The carbonate of lime is converted into sulphate of lime or gypsum. 2nd. A part of the lime contained in the *insoluble* phosphate of lime is also converted into gypsum; while the remainder, with the magnesia, forms *soluble* phosphates with the whole of the phosphoric acid. 3rd. The salts of soda are either converted wholly into sulphate, or they divide themselves between the two acids, and form a mixture of sulphate and phosphate of soda. All these compounds are soluble in water; the phosphates, of which the plant requires at certain seasons of its growth a ready supply, are especially so, and thus all the inorganic matters which the bones contain are brought into a condition in which they can readily, and without any waste, be made available for the nourishment of the plant.

The manurial value of bones is thus seen to be dependent partly on their phosphates, and partly on the ammonia they yield. The following points should therefore be attended to in estimating the value of a sample:—

1st. *Determination of water.*—A weighed quantity is dried in the water oven, until the weight remains constant.

2nd. *Determination of the total amount of fixed constituents.*—Introduce into a platinum crucible about 50 grains of the bone in a coarse powder; place the crucible in an oblique position over the gas or spirit burner, and allow it to remain until the ash has become quite white; the burning bone should be turned over from time to time with a platinum wire; when cold weigh the residue.

3rd. *Determination of the amount of sand.*—Digest about 50 grains (or the residue of 2nd) with dilute hydrochloric acid; throw on a filter; wash, dry, and ignite the residue.

4th. *Determination of the lime and phosphoric acid.*—To the filtrate from the sand (3rd) add a few drops of ammonia, so as nearly to neutralize the liquor, then add oxalate of ammonia, boil, and then excess of acetate of ammonia; allow the precipitated oxalate of lime to subside, then filter it off, convert it into sulphate, and weigh. To the filtrate from the oxalate of lime, add tartaric acid, and then ammonio-sulphate of magnesia, and well agitate; filter off, after standing for a day, wash the precipitate on the filter with ammoniacal water, dry, ignite, and weigh as pyrophosphate of magnesia. This method recommends itself by its extreme simplicity, though it is not absolutely accurate, as it takes no cognizance of the *magnesia*, which all bones contain; as, however, it exhibits the total quantity of phosphoric acid (the real fertilizing agent), it gives all the information required for estimating the manurial value of the sample.

5th. *Determination of the nitrogen.*—Ignite from 15 to 20 grains with soda lime, precisely according to the method recommended for the analysis of ammoniacal salts, in vol. i. p. 392. The result of the analysis will show the exact quantity of ammonia which the gelatine of the bone is capable of yielding by its decomposition.

6th. *Determination of the amount of carbonic acid, in combination with lime, and, perhaps, magnesia.*—This is effected by the method of *Fresenius and Will*, which has been fully described in vol. i. p. 391, of this Journal.

In estimating the value of a manure, the particular element required by the soil to which it is intended to apply it must be taken into account. "Thus (observes Anderson), a farmer who finds his soil wants *phosphates*, will look to the manure containing the largest quantity of that substance, and possibly not requiring *ammonia*, will not care to estimate at its full value any quantity of that substance which he may be compelled to take along with the former; but will look only to the source from which he can obtain it most cheaply. It may be as well, therefore, to point out that *ammonia* is most cheaply purchased in Peruvian guano; *insoluble phosphates* in coprolites; and *soluble phosphates* in superphosphates made from bone ash alone."

With this article Dr. Noad's regular series of papers on Analytical Chemistry terminates. He will, however, continue to contribute to our journal. His next article will be on the chemical detection of poisons. In closing his regular series, Dr. Noad ventures to hope that the object he has had in view, namely, that of communicating sound and substantial information on various matters, which not unfrequently come under the notice of practical chemists, has not been left altogether unattained.

PHOTOGRAPHIC CHEMICALS.—X.

SODA, HYPOSULPHITE OF. Symbol $\text{Na O S}_2 \text{ O}_3 + 5 \text{ H O}$; atomic weight, 124.—This salt, whose properties were discovered by Sir John Herschell, is a neutral combination of hyposulphurous acid and the alkali soda. When in excess, it forms soluble salts, with iodide, bromide, and chloride of silver, hence its use in photography as a fixing agent. It is prepared by passing sulphurous acid gas through a mixture of carbonate of soda eight parts, water sixteen parts, sublimed sulphur one part. When no more gas is absorbed, and the liquor smells strongly of it, boil gently for some minutes, evaporate to one-third, and crystallise. The salt being used in large quantities, is cheap and, generally speaking, pure. Its most frequent impurity is sulphide of sodium. This may be detected by finely powdering a small quantity and shaking it up with half its weight of absolute alcohol, which dissolves the sulphide only. Another test is, to add to its solution half its weight of pure iodine, which it should dissolve without becoming coloured. Hyposulphite of soda deliquesces slightly, its taste is extremely nauseous, but when combined with salts of silver it forms one of the sweetest substances known. When prints are fixed it is extremely liable to become acid, and acquire toning properties, *i.e.*, it will turn the immersed print from a brick red to a fine purple black. In the early days of photography most prints were toned by "old hypo," as it was termed, but although they were of a fine colour when first toned they soon became yellow, and ultimately faded. At first this was thought to proceed from the hyposulphites of soda and silver not being sufficiently washed out of the prints, but further research proved that it was due to the formation of a very unstable salt of silver belonging to the sulphur group. This salt, at first purplish black, soon changed by exposure to the air into sulphide of silver, which is black or brown in masses, but yellow in thin layers. The remedy for fading photographs was to avoid toning by sulphur. At the suggestion of M. le Gray, chloride of gold was added to the hyposulphite bath, and toned by forming a purple compound with the silver in the print, but this was found objectionable, inasmuch as the bath after a while toned by sulphur as well as by gold. The mixed toning and fixing bath was discarded, and prints are now first toned by an alkaline solution of chloride of gold, and then fixed in an alkaline solution of hyposulphite of soda. The hyposulphite solution is made alkaline in consequence of the smallest portion of acid causing the formation of dangerous sulphur-toning compounds. Nitrate of silver has the same effect, the prints are therefore well washed before they are fixed. As long, however, as the hyposulphite solution is kept alkaline we may have but little fear of its acquiring deleterious toning properties.

SODA, PHOSPHATE OF.—There are several phosphates of soda sold in commerce. Mr Maxwell Lyte recommends the ordinary alkaline, "rhombic phosphate," as a substitute for carbonate of soda in the alkaline gold toning bath. It is soluble in four parts of cold water.

SODIUM, CHLORIDE OF. Symbol Na Cl ; atomic weight, 58.5.—This salt, often called muriate of soda, is nothing more than common table salt, re-crystallised several times to free it from small portions of the chlorides of calcium and magnesium and sulphate of lime. It is prepared by dropping into a solution of common salt, in four parts of water, chloride of barium and carbonate of soda as long as any precipitate falls. The filtered solution is then evaporated, and pure cubic crystals of chloride of sodium are formed. It is important that chloride of sodium should be free from impurities, which render it deliquescent, as paper chlorised with the impure salt would acquire moisture from the air and rapidly deteriorate. The pure salt is dry and colourless. It is used as a chlorising agent, and for precipitating chloride of silver from old baths. A saturated solution mixed with tripoli has been extensively sold as a detergent for glass plates.

SULPHURIC ACID. Symbol S O_3 ; atomic weight, 40.—Sulphuric acid has already been treated of under "Collodion." Its only use in photography is in making nitrosulphuric acid. The pure acid has been isolated as an anhydrous solid. The monohydrated acid, *s.g.* 1.845, $\text{S O}_3, \text{H O}$, should always be used. The ordinary impurities of commercial sulphuric acid do not seem to interfere with its dehydrating action in the manufacture of pyroxyline.

TANNIN. Tannin, or tannic acid, exists in many organic substances, particularly those possessing an astringent taste, such as bark, gall-nuts, tea, coffee, &c. Gall-nuts contain two-thirds of their weight of tannic acid. It is obtained from them by reducing them to powder, and digesting with *washed* ether. The filtered liquid, on standing, separates into two portions, the lower

being an aqueous solution of tannic acid. Tannic acid is freely soluble in water, but rarely yields a clear solution, from a small quantity of resinous matter being present. It has lately received an important application in Major Russel's tannin process. The plate is coated, iodised, and washed; a solution of tannic acid is poured over it, which, on drying, leaves a film of varnish on the sensitive surface. The process seems daily to gain ground amongst photographers, from the simplicity of the operations connected with it, and from the excellent results obtained.

WATER. Symbol H O ; atomic weight, 8.—Chemically speaking, water is an oxide of hydrogen. For ordinary washing purposes common water may be used, but for solutions containing silver the best distilled water ought to be employed. In provincial towns, more especially in the north, much water is sold as "distilled" which is the condensed water from steam-boilers. Although answering very well for dispensing purposes, it should never be used for solutions, as it nearly always contains oily matter, which discolours nitrate of silver. The great objection to the use of rain or river water, is the almost certain presence of organic matter. The soluble chlorides and carbonates contained in it are not of so much consequence, as they are precipitated by the silver. Water containing chlorides in appreciable quantity should not be used for developing solution, as chloride of silver is precipitated when the developer comes in contact with the nitrate of silver on the plate.

The dealer in photographic materials is obliged to keep many substances which do not come under the head of chemicals: it will be as well to treat of them separately.

GUM ARABIC.—This well-known substance is employed in mounting the finished prints upon cardboard. The best picked white gum should be used, as the common quality frequently contains impurities which would cause the solution to ferment. The ordinary solutions of gum found in commerce are generally sour either from fermentation having set in, or from nitric acid having been added in minute quantities to prevent fermentation. The fresh solution only should be used, as the slightest acidity would cause the print to fade. The thickness of the solution is best found by practice. If too thin the print will fail to adhere to the mount, if too thick, lumps will form and prevent the print from lying perfectly smooth.

GELATINE is also used as a mounting agent, but is troublesome.

STARCH, in the form of arrowroot, is a good material. It should be well boiled and used fresh.

FLOUR PASTE, being easily fermentescible, should not be used, and common glue, although used by many, is generally putrid.

INDIA-RUBBER SOLUTION is used sometimes when prints are to be hung against damp walls. It may be made by dissolving India-rubber in benzole. It is difficult to use with neatness, being apt to collect in lumps.

COTTON WOOL.—This material is used for making pyroxyline and for cleaning glass plates. For the former purpose, the finest quality procurable should be sold; it may be purchased from Messrs. Hutton & Co., 6, Newgate-street, City, at about 2s. per lb. For cleaning plates, ordinary clean cotton wool answers very well; the staple, however, should not be too short.

DETERGENTS.—Almost every photographer uses a different detergent for cleaning glass plates. There are many pastes and solutions sold for the purpose, consisting of tripoli or whiting combined with alcohol and some alkali. The ingenious pharmacist will easily invent a formula for himself. Nitric acid, diluted with 20 parts of water, and made into a cream with tripoli, forms a very good solution for this purpose. Common whiting, made into a paste with spirits of wine and a few drops of ammonia, is frequently employed.

For cleaning the hands from stains of nitrate of silver, a detergent is sold under the name of cyanogen soap. It is simply white curd soap beaten into a paste, with powdered cyanide of potassium. A soap sand-ball, containing a good proportion of cyanide of potassium, properly christened, would have a good sale amongst amateurs. A solution of cyanide, in which iodine has been dissolved, is very serviceable for this purpose, as well as for taking out stains from linen, oil-cloth, &c.

GLASS.—The country pharmacist, who sells photographic materials, will find himself obliged to keep glass. There are two qualities generally used, flatted crown and patent

plate; the former, when pretty colourless and free from blots and scratches, is much used for positives. In this case, perfect flatness is not so requisite as in the negative process, where the plates are submitted to violent pressure in printing. Here, patent plate, which is ground and polished on both sides, is necessary. The two qualities are easily distinguished by reflecting from the surface any object with straight lines running across it—a window, for instance. The flattened crown gives a distorted image, while the reflection from patent plate is perfect. There is a colourless quality of patent plate in the market at present, which is imported from Germany, particularly ill adapted for photographic use; from containing a large quantity of alkali it is very soft, and, if left in water for a day or two, the surface becomes partially destroyed. To prevent injury to the hands and cloths, and to afford a rough edge for the collodion film to cling to, glass plates are ground at the edges. This is easily effected by rubbing the edges four or five times with a whetstone dipped in water; the stone should not be too rough, and should be kept well wetted, otherwise the glass will be chipped instead of ground, and the film of collodion rendered wavy by the inequality. Plates should always be packed with a piece of clean white paper, the size of the plate, between them. If printed paper is used, the letterpress is liable to become transferred to the glass, and is extremely difficult to move, even with the strongest nitric acid. The standard sizes of plates are as follow:—

Ninth plate	2½ in. × 2 in.
Sixth „	3¼ in. × 2¾ in.
Quarter „	4¼ in. × 3¼ in.
Third „	5 in. × 4 in.
Half „	6½ in. × 4¾ in.
Whole „	8½ in. × 6½ in.
Stereoscopic	6½ in. × 3¼ in.

10 in. × 8 in. and 12 in. × 10 in. are also common sizes; large plates are generally cut to order. Besides patent plate and flattened crown, white opal glass, for printing transparencies, and purple glass, to obviate the use of black varnish in taking positives, are frequently sold. Talc is sometimes used for positives; being easily cut with a pair of scissors, it may be fitted into rings and lookets.

Measures, funnels, and rods, should be kept in stock, as photographers, more especially amateurs, are notorious break-all.

White wax is used to wax paper negatives, in order to render them transparent, also in the waxed-paper process. It should be perfectly free from all adulteration, more particularly from tallow.

PAPER.—The ordinary qualities of paper sold in commerce are unfit for use in photography, on account of their composition being variable and their surface wanting in uniformity of texture. At first, photographers were unable to procure paper fit for their purpose, but as the demand increased the supply was met, and now there are some ten or twelve English and foreign makers. The quality of photographic paper is, however, extremely variable. Paper manufacturers cannot, or will not make paper of uniform thickness, surface, whiteness, and freedom from foreign bodies. The only test for paper is in its use, as no ocular examination will show defects which are necessarily concealed in the unprepared material. The principal defects found in photographic paper are coarseness, from the rags used not having been properly picked, imperfect sizing, and metal spots. The first of these defects is not so common as it used to be, no doubt on account of several manufacturers having lost their places in the market for having supplied coarse-grained paper highly glazed in the hotpress. The defect is only recognised on soaking the paper in water.

English papers are generally sized with gelatine and alum, and are hence somewhat acid in their reaction. From this circumstance, they are preferred when a plain salting solution is used, without albumen. When albumen is used with them, they do not give a good result; it appears to sink into the substance of the paper unequally, hence foreign papers are generally used for albumenising. They are sized with a mixture of starch and resin soap, and are slightly alkaline. If a paper is sized too strongly, the solution remains too much at the surface, and the resulting print tones with great difficulty; if, on the other hand, too little

size has been used, the solutions sink too deeply into the paper, and the image is poor, thin, and mealy. Albumen, applied to a paper of this sort, gives no gloss, no matter how strong the solution may be. Metal spots are caused by pins, or hooks and eyes having been left in the rags, or from particles of brass or iron becoming rubbed off the machinery in the course of manufacture. They are the most insidious enemies, only declaring themselves as large white spots in the finished picture. They are generally so small as not to be detected by the eye.

The principal varieties of English paper are Turner's, Whatman's Hollingsworth's, and Twogood's. The first three are particularly adapted for the negative and plain salted paper processes, and the latter gives excellent results when albumenised. The foreign papers are, Marion's, Canon's, "Papier Saxe," and "Papier Rive." They are all well adapted for albumenising, and are placed in the order of their quality, the last being best. Bad paper is one of the greatest drawbacks that the photographer has to contend against, and no one should keep paper that has not been tested thoroughly. Sheets should be taken from the two ends and middle of the ream, albumenised, and printed. Prepared paper is often offered for sale at low prices, but should always be refused. The care, attention, and cost of labour and material necessary to produce a good albumenised paper is so great, that cheapness is a certain index of inferior quality. Both negative and positive papers are manufactured, the former being thinner, and of finer texture than the latter. Canon's thin negative paper is well adapted for stereoscopic printing, as being hard, and having a fine surface, it takes a very high gloss when albumenised. It would pay any manufacturer to spend a thousand pounds in experiments to find out a perfect photographic paper. Much has to be learnt as to the influence of different sizes on the image. A theoretically good paper should consist of cellulose only, united with a pure size of starch or gelatine.

Pure filtering paper is of great consequence to the photographer. The ordinary paper contains iron and lime, salts which act most injuriously on silver solutions. Swedish paper is the best. Messrs. Morgan supply a quality specially made for the purpose, cut to size, at per hundred sheets.

Litmus paper is much used for testing the acidity of the nitrate of silver bath. It is made by digesting commercial litmus in six times its weight of water; the solution is filtered and divided into two parts, one of which is acidified with very dilute sulphuric acid until it begins to turn red; the other half is then added, and sheets of filtering paper are immersed in the solution, drained and dried. The paper is generally made into little books for use, and should be preserved in an air and light proof case. Red litmus paper is made by adding sulphuric acid to the solution until it is just red, and immersing the paper as above. The method of using litmus papers is too well known to need description. Yellow paper should always be kept. It is used instead of yellow glass for dark-rooms, and is better than calico, being less likely to fade.

VARNISHES.—There are two sorts of varnish used, one which is transparent for varnishing positives and negatives to preserve them from injury, the other an opaque black varnish for backing positives. The varnish for negatives should be either amber and chloroform, or Soehnée's Vernis Photographique, which is preferred by most photographers as being harder and cheaper. It is used by gently heating the plate, pouring it on and off, and once more gently heating, to prevent the varnish from becoming chilled. No other than the two varnishes named should ever be used for negatives. There are many "perfect" varnishes in the market, but they are not to be trusted, as they become tacky during great heat, and on the slightest approach of damp they crack in all directions. There is hardly a photographer who has not suffered the loss of many valuable negatives through using one or other of these pernicious mixtures. The method of making Messrs. Soehnée's varnish is, of course, a profitable secret. Amber varnish is made by dissolving the best yellow amber, finely powdered, in chloroform. The black varnish is made by dissolving asphaltum in coal-tar naphtha, and adding a small portion of India-rubber to prevent cracking.

The writer has now exhausted the subject of photographic materials; but as photography advances, new chemicals will be employed and new substances, whose photographic value is now unknown, will be added to the already bulky list of "Materia Photographica;" as they arise they will be tested and noticed.

The preparation of baths, developing solutions, iodised and albumenised papers, is very

profitable. The solutions must be prepared with the greatest care, and above all cleanliness. Particles of foreign matter, unappreciable to ordinary eyes, are quite sufficient to render a solution perfectly useless. The measures, scales, funnels, &c., used for photographic preparations must be kept for this purpose alone, and not used for dispensing. There are three principal classes of solutions—silver baths, developers, and fixing solutions. These three being antagonistic to each other, a separate set of measures, funnels, rods, and scales should be kept for each, and, when possible, they should be mixed at different times and counters. A measure, for instance, in which hyposulphate of soda, or pyrogallie acid has been dissolved will, after much use, retain sufficient of either of these substances in the marks made by the glass rod in stirring to spoil a silver bath were it to be mixed in it. Every solution should be marked "Poison," and a label attached with the name of the solution the formula used, and the date of preparation. As most solutions are used in dark places, common sense dictates the necessity of the labels being large and distinct. Purchasers should always be warned, that most photographic preparations are poisonous; the neglect of this has caused several lamentable deaths. Children, for instance, have swallowed cyanide of potassium in mistake for sugar, and iodising solutions, from their smell, have been taken for creature comforts of a spirituous nature.

C. W. QUIN.

THE NATURAL ORDERS OF PLANTS.

COMPOSITEÆ, ASTERACEÆ, OR SYNANTHERÆ.—THE COMPOSITE ORDER.

THIS is one of the largest and most important orders in the vegetable kingdom, and some of its members are to be met with in all parts of the world, though in different proportions. According to the calculations of Humboldt, "they constitute one-seventh of the phœnogamous plants (those having manifest flowers) of France, one-eighth of Germany, one-fifteenth of Lapland, one-sixth of North America, and one-half of the tropics of America." Upon the authority of Brown, "they only form one-sixteenth of the flora of New Holland, and did not exceed one-twenty-third in the collection of plants formed by Smith upon the Western Coast of Africa in Congo. In the northern regions the plants are generally herbaceous, but in warm climates they sometimes become shrubby, or even arborescent. Most of those of Chile are bushes, and those of St. Helena are chiefly trees. Plants belonging to the sub-order Tubulifloræ abound principally in hot climates, whilst those of the Ligulifloræ are met with in cold regions. The Labiatifloræ are almost entirely American, and from the southern provinces beyond the tropics. The order constitutes about one-tenth part of all described plants, and, according to Lindley, contains about one thousand and eighty genera, and nine thousand (?) species. It belongs to the class Exogens; sub-class Corollifloræ.

BOTANICAL CHARACTERS.—The leaves are alternate, or opposite, and without stipules (little leafy appendages at the base), usually simple, but commonly much divided. The flowers, which are termed florets, are hermaphrodite, or unisexual, collected in dense heads upon a common receptacle, surrounded by an involucre, and termed capitula. The separate florets are also frequently furnished with membranous scale-like bractlets at their base, which are termed Paleæ of the Receptacle. The calyx (outer floral covering) is superior, closely adhering to the ovary, and undistinguishable from it; its limb is either entirely abortive, or membranous, and then entire or toothed; or pappose, that is, divided into bristles, or simple or branched, or feathery hairs. The corolla (inner floral covering) is monopetalous (petals more or less united), tubular, superior, and usually deciduous, either ligulate (strap-shaped), bilabiate (two-lipped), or funnel-shaped; in the latter case, four or five toothed, with a valvate aestivation. The stamens (male organs) are five in number—rarely four, inserted upon the corolla, and alternate with its divisions. The filaments (that part of the stamen which supports the anther) either distinct or monadelphous (collected into one bundle). Anthers (cellular cases on the apex of the stamen, inserted upon the filament) united into a tube, which is perforated by the style (part of the female organ which connects the stigma and the ovary), and termed syngenesious or synantherous. The ovary (that part of the female organ which contains the ovules or rudimentary seeds) is inferior and one-celled, with a single erect ovule. The style is simple, undivided below, and bifid above (split half

way into two parts). The stigmas (that part of the female organ which receives the pollen) two, one being placed on the inner surface of each division of the style. The fruit, termed a cypsela, is dry, indehiscent, one-celled, and crowned with the limb of the calyx, which is often pappose. The seed is solitary, erect, and exalbuminous.

DIAGNOSIS.—Professor Bentley thus describes them :—"Herbs or shrubs, with exstipulate leaves. Flowers (called florets) arranged in dense capitula, and surrounded by an involucre. Calyx superior, its limb abortive, or membranous, or pappose. Corolla monopetalous, four or five toothed. Stamens epipetalous, equal in number to the divisions of the corolla (generally five), and alternate with them. Anthers syngenesious. Ovary inferior, one-celled, with one erect ovule. Style simple, bifid above. Fruit one-celled, dry, indehiscent. Seed solitary, erect, exalbuminous. Radicle inferior."

DISTINCTION FROM OTHER ORDERS.—It may be at all times recognised by its inferior one-celled ovary, with an erect ovule, its syngenesious stamens, and capitate flowers. From *Calyceæ* (the Calycera order), it is distinguished by its erect ovule and exalbuminous seeds; from *Dipsacacæ* (the Teazle order), by its syngenesious anthers, erect ovule, and exalbuminous seeds.

This order has been variously subdivided by different authors. Linnæus included them in his class Syngenesia, which he divided into five orders, according to the sexes of the florets and the nature of the involucre, viz., *Polygamia Æqualis*, *Superflua*, *Frustranea*, *Necessaria*, and *Segregata*. Jussieu divided the order into three sections. 1. *Cynarocephalæ* (from *Cynara*, the Artichoke, and κεφαλή, a head), having the flowers all tubular, involucre hard, conical, and often spiny. 2. *Corymbifera* (from *Corymbus*, a corymb, and φέρω, I bear), having tubular florets in the centre or disk, and ligulate in the ray or circumference; involucre, hemispherical, leafy, or scaly, seldom spiny. 3. *Chicoracæ* (from *Chicorium*, Succory), having the florets all ligulate. Another section was subsequently added, containing bilabiate flowers, and termed *Labiatifloræ*. Decandolle, whose method is that generally adopted, divides them as follows :—

SUB-ORDER 1. Tubulifloræ. Florets tubular or ligulate, either perfect, unisexual, or neuter. Perfect florets, tubular, with five, or rarely four equal teeth. This sub-order he divides into five tribes,—*Vernoniæ*, *Eupatoriæ*, *Senecionidæ*, *Asteroidæ* (corresponding to the *Corymbifera* of Jussieu), and *Cynaræ* (corresponding to his *Cynarocephalæ*).

SUB-ORDER 2. Labiatifloræ. Hermaphrodite florets, or at least the unisexual ones, divided into two lips. Of this sub-order there are two tribes,—*Mutisiæ* and *Nassaviæ*.

SUB-ORDER 3. Ligulifloræ. Florets all ligulate and perfect. (This corresponds to *Chicoracæ* of Jussieu.)

SUB-ORDER TUBULIFLORE.

GENERAL PROPERTIES.—The presence of bitter matter combined with astringency, an acid resinous substance, volatile oil, and starch in the roots of some species, are the prevailing characteristics. Their action is tonic, stimulant, or astringent; some are esculents. The *Corymbifera* have the general bitterness of the order, and some of them possess an aromatic odour, due to the presence of volatile oil. A few are employed as dyes. The *Cynarocephalæ* are usually tonic and stimulant. By cultivation, the bitterness of plants of this section often become lessened, so that they become esculent.

PRINCIPAL PLANTS AND USES.

CORYMBIFERÆ.

ACHILLEA.—The species *Agregatum*, a native of the South of Europe, is a very powerful stimulant. It is regarded by the French as a vulnerary, and termed *Herbe au Charpentier*. An article on the species *Millefolium* will be found in our Botanical Calendar for July.* The species *Nobilis*, *Setacea*, and others, are slightly stimulating.

ANACCLUS.—The root of the species *Officinarum* is commonly used in Germany for the same purposes in which we employ Pellitory of Spain. The root of the species *Pyrethrum* is an energetic local irritant, and sialogogue, in toothache, relaxation of the uvula, &c. The fresh root is stated to produce the sensation of extreme cold, followed by burning heat, on the hands of those who gather it.

ANTHEMIS.—An article on the species *Nobilis* will be found in our Botanical Calendar for August.* The species *Tinctoria* is stated to yield a yellow colour, used for dyeing.

ARNICA.—An article on the species *Montana* will be found in our Botanical Calendar for June.†

ARTEMISIA.—The species *Abrotanum*, is the Southernwood, a fragrant plant employed on the Continent in making beer. An article on the species *Absinthium*, will be found in our Botanical Calendar for May.‡ The Persian species *Acetica* is said to have the odour of strong vinegar. The species *Alba* and others are said to serve as nourishment to the herds of the Kirghese and Calmucks. The Anthelmintic, known under the name of Semen Seriphi, or Barbotine, consists of the flower-heads of the species *Cerulescens*, a Mediterranean plant. The species *Camphorata* has a similar action. The species *Chinensis*, and others, are stated by Lindley to yield the Moxa of China. It is prepared from the cottony or woolly covering of the leaves, and used as a cautery by burning it upon parts affected with gout and rheumatism. The species *Dranunculus* yields the Tarragon, the leaves of which are sometimes used in pickles, salads, &c. The species *Gallica* possesses similar properties to that of the species *Cerulescens*. It is termed in France Sanguerie, or Sanguerite. The species *Indica*, is considered in India to be a powerful deobstruent and antispasmodic. The leaves of the species *Madaraspatana*, are esteemed by the Indian doctors a valuable stomachic medicine; they are also reported to be sometimes used in antiseptic and anodyne fomentations. The species *Mutellina* and *Spicata*, both Alpine plants, are stated to furnish between them, the bitter aromatic liqueur termed Creme d'Absinthe. The substance sold as Wormseed, and known under the names of semen-contra, semen-cinæ, semen-santonium, &c., consists of the broken flower stalks, involucre, and flower buds of the species *Contra*, *Pauciflora*, *Lercheana*, *Sieberi*, *Vahlia*, &c. It is employed as a vermifuge.

CERADIA.—A brittle resinoid substance, rather fragrant when burnt, and termed African Bdellium, is the produce of the species *Furcata*, a half succulent plant, inhabiting the most sterile regions of south-west Africa.

CHRYSANTHEMUM.—The species *Leucanthemum*, an indigenous plant, is stated to prove a certain remedy against fleas. The Bosnians are said to place the plant in the bed of domestic animals, when these insects are stated to be destroyed in a very short time.

DAHLIA.—A beautiful carmine is said to be obtained from the corolla of some species of this genus.

ECLIPTA.—The species *Erecta* is reported to be employed by the women of Brazil to dye their hair black,

EUPATORIUM.—The species *Ayapana* is stated to be an energetic sudorific, and to be found a powerful repellent of the poison of venomous snakes. In Brazil the bruised leaves are applied to the wound and frequently changed, and some spoonfuls of the expressed juice are from time to time administered, until the patient is found to be free from the symptoms of the poison. The species *Cannabinum*, a common European plant, growing in marshy situations, is said to be emetic and purgative. The substance called matico, and used as a styptic, is stated by Hartweg to be the leaves of the species *Glutinosum*. The matico used in this country is, however, the produce of *Artante Elongata*, a plant belonging to the natural order *Piperaceæ*, the Pepper order. The species *Perfoliatum* possesses similar properties to those of the species *Ayapana*.

GUIZOTIA.—From the seeds of the species *Oleifera*, (*Verbesina Sativa*) of Lessing, a plant extensively cultivated in India, a very thin bland oil is obtained, which is useful for painting and other purposes. It is known in India as Ram-til, Kala-til, Noog, &c., and the seeds are known in commerce under the name of Niger seeds.

HELIANTHUS.—The fruits (commonly called seeds) of the species *Annus*, or Sunflower, have been recently employed in the manufacture of a kind of soap, called sunflower soap. They are large, sweet, very palatable and wholesome, and constitute a favourite food of some of the smaller members of the feathered tribe. The pith contains nitrate of potash, and is sometimes employed in the preparation of Moxas in Europe. The tubers of the species *Tuberosus* are eaten under the name of Jerusalem Artichokes. The dried fruits have been used as a substitute for coffee.

* Vol. I. p. 270.

† Vol. I. p. 213.

‡ Vol. I. p. 186.

INULA.—A brief notice of the species *Helenium* will be found in our Botanical Calendar for January and February.*

MATRICARIA.—The species *Chamomilla* possesses similar properties to those of the true Chamomile. They constitute the Flores Chamomillæ of German pharmacologists. The flowers are commonly distinguished as Common Chamomiles.

MIKANIA.—The species *Guaco* and *Opifera* have been employed as antidotes to the bites of venomous serpents. The species *Officinalis* is stated to act like Cascarilla.

MADIA.—A transparent yellow scentless oil is said to be obtained by expression without heat, from the species *Sativa*, a Chilian plant of late years introduced with success into the agriculture of the drier parts of Europe. The oil is stated to be useful for dietetic purposes, as for salads, &c. The cake left after expression of the oil is said to be good for cattle.

MARUTA.—Every part of the species *Fetida* is fetid and acrid, blistering the skin when much handled. Its decoction is stated to be a strong and active bitter in the dose of a tea-cupful, producing copious vomiting and sweating.

PTARMICA.—The heads of the species *Atrata*, *Nana*, and *Moschata* are said to be used in the Swiss Alps as tea. The species *Moschata* is also stated to be the basis of the aromatic liqueur known as Esprit d'Iva. The root of the species *Vulgaris* is aromatic; the whole plant is pungent, provoking a flow of saliva; the dried leaves produce sneezing, which is thought to be owing to their sharp marginal teeth.

PYRETHRUM.—The species *Parthenium*, or Feverfew, possesses properties similar to those of the Chamomile. Its smell is said to be peculiarly offensive to bees, which are stated to be easily kept at a distance by carrying a handful of the flower heads.

SANTOLINA.—The flower-heads of the species *Fragrantissima* are extremely fragrant when dry, and are said to be sold as a substitute for Chamomile in the shops of Cairo under the name of Babonny or Teyssoum. According to Forskahl, the fresh juice of the plant is applied in affections of the eyes.

TANACETUM.—The species *Vulgare*, or Common Tansy, possesses tonic and anthelmintic properties.

TUSSLAGO.—An article on the species *Farfara*, or Coltsfoot, will be found in our Botanical Calendar for March.†

VERNONIA.—The fruit of the species *Anthelmintica* is used in the East Indies as an anthelmintic.

(To be continued.)

THE NEW MAYOR OF MANCHESTER.

THAT we are a "nation of shopkeepers" is every day becoming more manifest, by the manner in which the dealing classes are accumulating power and influence in the government of the country, both locally and nationally. Honours, which were once restricted to the "upper ten thousand," and latterly shared by the wealthier portion of merchants and manufacturers, are now beginning to be dispensed to a section of the community who have hitherto been considered as only a degree removed from the working classes. The vender of pennyworths was at one time deemed of high distinction if he was on speaking terms with the parish beadle, and an overseership, in his own and his neighbours' estimation, placed him on a footing equal to the great ones of the land. The Corporations Act opened to him new fields for distinction. He might become a town councillor if he had the hardihood to prosecute successive struggles for such an office; but an aldermanship was still to be reserved for such material as justices of the peace, doctors, and divines were fashioned out of. The idea of succeeding to the mayoralty of even a hole-and-corner borough must not be dreamt of behind the counter. Who could pay authority to the man whose calling it was to weigh you an ounce of tea, measure a yard of calico, or make up a prescription for a bolus? These prejudices on the one hand, and social disabilities on the other, have gradually disappeared. Civic distinctions are becoming more accessible; and in no instance has this feature of our social progress been better exemplified than in the election of the present Mayor of Manchester.

Thomas Goadsby is a "Chemist and Druggist," carrying on business at a shop near Albert Bridge, Manchester. He belongs to one of the oldest families in the neighbourhood, and one of the most respectable, so far as personal worth is concerned. Mr. Goadsby's immediate progenitor was a druggist, having been apprenticed, in the year 1794, to a Mr. George Brown, of Market-street, when Manchester contained only about eight or ten members of the pro-

fession. Mr. Brown was a man of considerable eminence in the trade; and his success was such, that on his death, which took place about ten years after the time of young Goadsby's being placed in his establishment, he had accumulated a fortune of some thirty or forty thousand pounds. The father of the distinguished subject of this notice, on the expiration of his apprenticeship, engaged himself, in the capacity of assistant, with a druggist of the name of Knight, in Bishopsgate-street, London; here he remained but a short time, choosing rather to be in his native town. He returned to the latter place in the year 1802, where he married a Miss Greenaugh, daughter of a fustian manufacturer, residing at Ardwick. Mr. Greenaugh died some years before his daughter's marriage, having realised considerable property, a portion of which was brought by a large prize drawn in a state lottery. The bulk, however, was realised from profits on fustians, which were then considerable, from the circumstance of the trade being in its infancy, and, consequently, in few hands. Upon his marriage, the elder Goadsby commenced the business of a drysalter, and was eminently successful, but through the dishonesty of a near relative, who was engaged in the concern, a great portion of the capital was lost. He subsequently returned to his old business of chemist and druggist, opening a shop in Chapel-street, Salford. At that time (1807) the number of druggists in Manchester did not exceed twelve, whilst in Salford, and thence to Warrington, a distance of eighteen miles, there was not one on the direct line of road. At the shop in Salford, Mr. Goadsby, senior, remained until the Christmas of 1834, when he retired from business with an ample competency.

The present Mayor of Manchester was the second son of the preceding gentleman, and was born in Paradise-terrace, Greengate, Salford, on the 19th of April, 1805. In 1811 he was put to school to a Mr. John Hampson, a gentleman who had the distinguished honour, not often allotted to one man, that of educating *four mayors*,—Mr. Jenkinson and Mr. Livingston, of Salford, and Sir James Watts and Mr. Goadsby, of Manchester. The latter pursued the usual routine of school education adopted at that period, which presents nothing beyond the ordinary class of elementary training. Young Goadsby left Mr. Hampson's establishment on the 30th September, 1817, and in two days subsequent was apprenticed to his own father, the former being then in his thirteenth year.

There were no early closing societies at that time, so that, from the hour of seven in the morning to eleven at night, the future mayor had to stand behind the counter, engaged actively all the time in a business that was rapidly growing. It was the close application which his duties required, that fostered in him those active business habits which marked, while they contributed to, his successful career. Mr. Goadsby continued in this capacity up to the age of twenty-one; when, on being released from his apprenticeship, and assuming the responsibilities and privileges of manhood, his father made overtures to him that bespoke a parent's kindness and consideration. Calling him into his counting-house, the elder Goadsby expressed sentiments that were highly commendatory of his son's industry, offered him a salary of fifty pounds a-year, to be advanced during the following two years, and then a partnership. The young man burst into tears at this communication, expressed his gratitude to his parent, and thought himself the happiest of mortals.

This may be regarded as the commencement of Mr. Goadsby's career,—a career distinguished alike by its integrity and its success, and for the honour it has conferred upon the class of tradesmen to which he belongs.

On the first of January, 1829, the principal of the concern paid over to his son a handsome share of the profits, as an earnest of what the latter might expect if he continued steadily and perseveringly in the career he had hitherto pursued. In May, 1830, they commenced another shop at the corner of Water street, New Bailey Bridge, now known as Albert Bridge. This establishment is the "Goadsby's" of the present day. In a few years after the opening of this shop, another son was taken into the concern, and the two businesses were conducted under the name of "Goadsby and Sons." The principal shortly after retired from business, leaving the concern in the hands of the two sons. The success which had hitherto followed their fortunes received a considerable check at this period. The junior partner, who was of an open, and an easily wrought upon disposition, got entangled with an unprincipled acquaintance, who brought him to ruin. Dissolution of partnership was the immediate consequence of this misfortune; the subject of this notice carrying on the business alone. In March, 1831, he entered into a matrimonial engagement with a young lady, daughter of Mr. Brereton Grime, of Manchester. His father-in-law was largely endowed with the embellishments of civilised life. His intellectual attainments were considerable, and his moral and social disposition—his capabilities of guiding and instructing—were such as "to give the world assurance of a man."

In 1832, that terrible scourge, the cholera, broke out in Manchester for the first time. It was a second "plague," the mortality consequent being so great that the belief is still prevalent that many people were buried before they were quite dead. Mr. Goadsby was very active during this visitation, in attending to the medical wants of his neighbours, so that when the panic had subsided he found himself in the possession of an excellent business, and which has gone on increasing up to the present time.

His connection being established, Mr. Goadsby began to mix himself up with public matters—chiefly of a local character. He was made Commissioner of Police in 1839; the

local administration being then invested in that body. In a few years subsequent the powers of the commissioners were transferred to the corporation, and in November, 1844, the ex-commissioner was elected councillor for the "Exchange ward." In 1847 he retired, there being every prospect of a severe contest. There was besides another inducement which led to this step. His business required all his attention, from its increasing tendency. Although he retired as representative for Exchange ward, his friends were not willing to dispense with his services. The late Sir John Potter, and a few other admirers of the rectitude and the business qualities of Mr. Goadsby, resolved to return him to the Municipal Council, without soliciting his participation in the contest. They accordingly succeeded in returning him as member of St. James's ward, unattended with any expense to himself, and even without his being at the trouble of putting forth an address. Of this seat he held undisputed possession during ten years, but was subsequently put to the inconvenience of a contest, on political grounds,—Mr. Goadsby being a radical, and his opponent a conservative. The contest was an expensive one; the entire cost of Mr. Goadsby's candidature falling upon himself, but he was rewarded by the satisfaction of having obtained a complete triumph over his adversary.

Four years ago the members of the council, with only one dissentient, elected Mr. Goadsby to the dignity of alderman, he having been put forward on three prior occasions, and each time defeated; making strong the aphorism of Disraeli, that "The history of success is the history of defeats."

Three years ago Mr. Goadsby was put in nomination for the office of chief magistrate of the city, when he polled fifteen votes, making himself a strong minority. In November, 1860, he was again brought forward, being opposed by Mr. Councillor Curtis, and betwixt and whom the votes were equally divided. The retiring mayor, Ivie Mackie, Esq., having the privilege of voting with the rest, and afterwards giving the casting vote, decided the election in favour of Mr. Curtis; and the claims of the worthy shopkeeper were left over to a succeeding opportunity. In the November of the present year he had the honour of being elected to the civic chair, with the unanimous voice of the whole council; having obtained the highest distinctions out of Parliament that his admiring fellow citizens could possibly award him.

To point out the sphere of usefulness with which Mr. Goadsby has been chiefly identified, his services in one distinct department of the corporation need only be named. In 1846 the corporation purchased the manorial rights and properties of the Manor of Manchester, then belonging to Sir Oswald Mosley. Mr. Goadsby was elected the first deputy chairman of the committee, and in little more than two years afterwards was appointed chairman, which office he has held up to the present time. The first year of management, from causes to a considerable extent beyond control, the loss to the corporation upon this department was upwards of a thousand pounds. The following year the profit, on the contrary, amounted to about 500*l.*, whilst the year ending August 31st, 1861, brings a profit of near 8,000*l.*,—the profits having gone on gradually increasing from the end of the first year of management up to the present time. To sum up, a property which was originally bought for 200,000*l.*, and with additions and improvements since made, is now estimated as being worth 350,000*l.*, (which sum it would easily fetch if offered for sale) has cost the people of Manchester only 39,000*l.* This sum has already been paid, and, taking the profits now being realised into consideration, it may be safely concluded that the ratepayers will not again be called upon to contribute the smallest trifle.

From the position which Mr. Goadsby has held in connection with the working of this department for so long a period, it may be inferred that the success of the undertaking is in a great measure attributable to his personal zeal and acquaintance with business tactics. The officers serving in the department speak of him as being kind and affable in his transactions with them, and this demeanour he carries throughout the whole business of his life. His courtesy is only excelled by his modesty, and those who may have sneered at him on account of his calling, are bound to admit that he is in every respect a gentleman; for the shopman of to-day, who would in the plainest manner possible serve you with three-pennyworth of "Molly Brow's Bottle," may to-morrow be seen driving the finest equipage that the city of Manchester can boast.

As some proof of the estimation in which this gentleman is held by the trade, it may be stated that he has been unanimously elected as a vice-president of the United Society of Chemists and Druggists, in conjunction with Mr. Alderman Bowker and Mr. Thomas Gilks Gibbins, to represent the Lancashire district.

ANTI-NEURALGIC POMATUM.—The Paris correspondent of the *Lancet* thus alludes to a preparation which was brought before the last meeting of the Academy of Sciences:—With regard to the unguent, M. Charrière, its author, who, since 1855, has been mainly occupied in rubbing into all comestable victims to tic and rheumatism a compound formed of chloride of gold and sodium with cold cream, expresses himself very confidently, and states, that during the six years in which he has used this preparation its success has been invariable. The recipe for its composition is as follows: Chloride of gold and sodium, one scruple; galenic ointment, one ounce.



JENNINGS' FLOWER VASE.

This exceedingly ingenious contrivance consists of a wide-mouthed bottle, or vase. Around the neck is a brass collar, formed of two rings, the lower of which, *B*, is fixed; the upper is capable of being turned round. In the interior of the collar, extending from the moveable upper to the fixed lower ring, and attached to both, is a short tube of India-rubber, which lines the collar, and is of the full size of the neck of the bottle. On turning the upper ring round, the elastic India-rubber tube is stretched, and also twisted, being pulled into regular folds, which project out from the sides and meet in the middle, as shown in the second figure. By turning the upper ring more or less, the opening left in the centre of the India-rubber can be varied to any required extent, from the full size of the mouth of the bottle to the smallest possible size, or it can be closed entirely if required; the action is exceedingly elegant and efficient.



Fig. 1.

The advantage of this contrivance consists in the circumstance that any number of flowers, from a single stem to a full-sized bouquet, can be held securely and in an erect position, the India-rubber clasping them with precisely that amount of pressure which is sufficient to maintain them as they are placed. Not to speak of the greater elegance of the arrangement

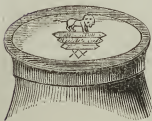
for general use, the contrivance must offer great convenience to artists and sketchers, who require a few flowers to be painted in any fixed position.

Moreover, the vessels can be used for other purposes, as the holding of powders or perfumes, as the opening is capable of being closed in a perfectly air-tight manner by the turning of the upper ring.



Fig. 2.

JENNINGS' PATENT CAPSULES FOR JARS AND BOTTLES.



These capsules are designed to effect, in a rapid and perfect manner, the air-tight closure of jars or wide-mouthed bottles. Each capsule consists of a tin-plated cover, the margin of which is turned in, securing the outer edge of a flat ring of vulcanized india rubber.

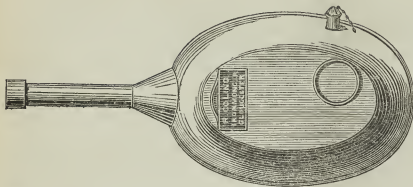


When required for use the india rubber is turned back on to the top of the metal, which is then placed on the jar to be closed. The rubber is then turned down, and the contents are instantly enclosed in a perfectly air-tight condition, as the contraction of the ring around the neck of the vessel renders the escape of moisture impossible.

These capsules can be removed without trouble, and refixed in a moment. They are particularly adapted to jars containing pill masses, or extracts which require to be kept soft, and also to those holding any confections which require to be preserved from contact with the air; in fact, they are applicable to all purposes for which bungs or loose covers have been employed, and are very superior in efficacy to either.

For preserve pots, and jars holding pickles, they are especially valuable, as the contents of a jar which has been opened are as perfectly preserved from contact with the air and consequent mouldiness as those which have not been opened. In fact, they seem equally well adapted for family use as for pharmaceutical purposes. The larger sizes, if perforated with holes, would make very secure covers to leech jars.

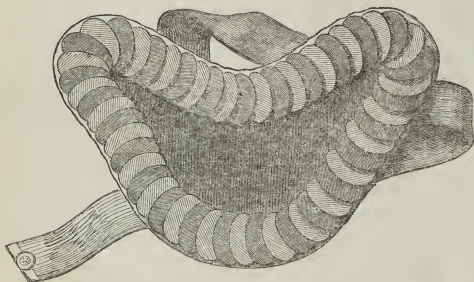
COLING'S DRENCHING BOTTLE.



This drenching bottle for administering liquid medicines to horses offers several very manifest improvements over the old form; the tube or neck is of tinned iron, so that it cannot be injured by biting. The bottle is of stout tinned plate, and is of sufficient capacity to hold a full drench; if corked it may be safely carried in the pocket, and will keep warm for

hours; or if cold, may be re-warmed by placing it in boiling water without exposing the medicine or soiling another vessel. A ring is soldered on each side, which enables it to be held more securely, and prevents it slipping when in use. It is also furnished with a tube to admit the air when the bottle is in use, thus enabling the drench to be given with any desired rapidity, as the supply of air can at any moment be stopped with the finger. It appears to us a good, cheap, serviceable article.

KERSHAW'S VOLTAIC-MEDICO ELECTRIC FLEXIBLE BATTERIES.



These batteries consist of a series of small oval plates of brass and zinc, placed alternately on a flexible foundation; each plate overlaps the adjacent one, so that when applied to the surface of the body every one comes in contact with the skin. The flexible foundation contains an impervious layer of oiled silk; con-

sequently the moisture of the insensible perspiration acting on the metallic plates produces a galvanic action; and as the circuit of each pair of plates is completed by the skin, the electric current must pass through it, producing an influence which is said to be beneficial in a variety of diseases.

It is obvious that if the numerous pair of plates which compose these batteries were so arranged as to produce one continuous battery, and that the current from the extremities were directed through the body, a very powerful effect might be produced, but with the present arrangement it appears that the effect in the first instance at least must be confined to the skin, though possibly the whole may act as a constant though mild counter irritant, and in this manner produce a beneficial result.

WRITING PRESCRIPTIONS.—A correspondent to the *Times* writes:—"As a dispenser to a general practitioner, I beg to call attention to the careless manner in which consulting physicians write their prescriptions, more especially as regards the dose, the draehm often resembling the ounce, and the writing so generally blotted and crabbed that the dispensers are often obliged to make guesses, with very little light to guide them to a right conclusion. The blame, whenever a mistake occurs, is always attached to the chemist or assistant, without considering the anxiety and trouble these unfortunates have in deciphering writing worse than falls to the lot of a post-office master. The public have often ridiculed the style of physicians' prescriptions, but will be unable to joke when a mistake more serious than usual occurs. I hope any physician reading this letter will for the future give up the affectation of studied negligence."



THE UNITED SOCIETY OF CHEMISTS AND DRUGGISTS. GREAT MEETING AT NOTTINGHAM.

A PUBLIC meeting of chemists and druggists belonging to Nottingham and the Midland district was held on Tuesday, the 3rd instant, in the Grand Jury Room of the Town Hall, for the purpose of forming a branch association of the United Society of Chemists and Druggists, which has its head quarters in Bell-yard, Doctors' Commons, London, and which has been established for the following objects :—The establishment of a benevolent fund for the assistance of members in sickness, old age, and death; to carry out, by district meetings and combined action, any improvement that may be deemed necessary for the welfare of the trade, such as early and Sunday closing, or any other arrangement that may be of advantage; to watch the progress of, and support or oppose any legislative enactment that may affect the interests of the chemists and druggists as a trading community; to answer any legal question relating to the trade rights of members, free of cost; to keep a registry of the transfer of businesses, required partnerships, and situations for assistants, &c., and to be the general recipient and exponent of any other trade requirement; and to establish a library of reference and a reading-room, furnished with trade periodicals and works of scientific interest. It is intended also, as the society progresses, to establish a school for the children of members, and to facilitate analytical enquiry. There was a respectable attendance of members of the trade, belonging to Nottingham. The chair was occupied by John Hadderley, Esq., and amongst the strangers present were Mr. Buott, the travelling agent for the society; Mr. Potts, of Ilkeston; Mr. Walters, of Derby; Mr. Ely, of Bingham; Mr. Ault, of Eastwood, &c. &c.

The CHAIRMAN in opening the proceedings, remarked that, although it might seem strange on his part to take the chair, considering that he had retired from the business some time ago, yet as he was the oldest member of the trade in the town, he had agreed to the wish of his friends to preside on the occasion. He expressed his cordial concurrence in the objects for which the society was established, more especially as regarded the formation of a benevolent fund to provide assistance for the members in sickness, old age, and death; and he had no doubt that the establishment of such a benevolent fund as was proposed, would have an excellent effect, and would relieve much of the suffering and misery which often came upon tradesmen through no fault of their own. After enlarging upon other points mentioned in the society's programme, he called on

Mr. BUOTT, who read letters of apology for unavoidable absence from Mr. Samuel Pinder, of Laxton, near Newark; Mr. J. Hopkinson, of Grantham; and Mr. E. Gaylor, of Belper. Mr. Buott next read the rules adopted by the executive committee of the society, and suggested that instead of discussing them at the meeting the members should obtain copies of them, and afterwards discuss them at their monthly district meetings, so that the opinion of the trade might be arrived at in a proper manner, and communicated to the executive committee. (Hear, hear.)

Mr. WHITE then moved the first resolution, which declared that co-operation was essential to the strength and progress of chemists and druggists as a trading community.

Mr. BASS, in seconding the resolution, said he entirely agreed with the sentiment it expressed, and he hoped it would meet with general acceptance from the members of the trade present.

The resolution was then put and carried unanimously.

Mr. DENNANT moved that the members of the United Society of Chemists and Druggists resident in Nottingham and the adjacent towns do now constitute themselves into a Midland District Association to carry the objects of the institution into effect. After referring to the importance of the resolution, Mr. Dennant said it was right in the midst of day duties to think of others rather than themselves. They must all feel that selfishness was the dominant evil of society, and that if they could get rid of it they would have a glorious state of things on earth; and he was glad to see a movement commenced in their business to foster a benevolent spirit in the minds of its members. The operations of the society in carrying out improvements for the welfare of the trade, such as early and Sunday closing, would be, he thought, of the highest value and importance to them all. It had been proved amongst other classes of tradesmen, such as grocers and drapers, that the early closing movement had been to them eminently successful, and he saw no reason why it should not have been adopted by their trade years ago. Some time ago he resolved to put up his shutters at eight instead of nine o'clock. Those who came after eight were generally morphia and opium customers, and

by giving them notice he did not lose their trade, and the result had been a saving of gas, as well as an increase of time for study or recreation, and an improvement in his health. He trusted that the district meetings would at once take up the subject, and that before long the whole of the trade might unite in carrying out the early closing movement. He enlarged upon the advantages which would accrue to the trade from these district meetings, and expressed a hope that they would not be merely "free and easies." He suggested that short papers might be prepared and read at them, and that the subject might be afterwards discussed; they would thus add to each other's knowledge, and then young men would be encouraged to study their business with greater zeal; and they would be not only benefiting themselves, but the public would also be benefited.

Mr. LEWIS seconded the resolution, remarking that if they united together to support the society they would soon establish it on a firm basis, and they would find that it would have an important influence in promoting their interests.

The resolution was carried unanimously.

Mr. PALETHORPE, in moving the next resolution, to the effect that the officers of the association shall be a chairman, a vice-chairman, a district secretary, and a district committee, with a local secretary for each town in the district—referred to the importance of such an association being formed in the town. He spoke of the necessity of steps being taken to introduce the early closing system into their trade, expressing his opinion, based on four years' experience, that they would do quite as much business if they closed at seven instead of nine o'clock. He deprecated the system of opening on Sundays followed in the trade, and which turned them into slaves. Working men and tradesmen in other lines of business could make a living by working twelve hours a day on six days in the week, and he could see no reason why chemists and druggists should not do the same. There was another point in which the society would do good, because it would afford them opportunities of meeting together in a friendly way, to discuss questions connected with their trade to mutual advantage.

The CHAIRMAN expressed his concurrence in the remarks made by Mr. Palethorpe, on the subject of early closing, and the advantages which would accrue to the trade from the formation of the society.

Mr. WALTERS, of Derby, in seconding the adoption of the resolution, gave a somewhat gloomy account of the condition of the business in Derby, on account of the opposition they met with from grocers and small shopkeepers, who were beginning to sell drugs. He also stated with regret that the early closing movement, which was at one time assented to by all the chemists in Derby, was now being completely broken down, and he urged all connected with the trade in the district to join the association, in order that they might, if possible, improve their position.

The resolution was then agreed to.

Mr. POTTS, of Ilkeston, moved that Mr. Charles Bass be requested to act as vice-chairman, and Mr. Squire as secretary for the district; and that the chairman, vice-chairman, and district secretary, with the following gentlemen, do constitute the district committee, with power to add to their number, viz.:—Messrs. Palethorpe, Dennant, Patchitt, Thomas Harrison, Lewis, T. B. Fletcher, Woodward; Hart, of Derby; Potts, of Ilkeston; Woodcock, of Lincoln; Taylor, of Newark; Oldham, of Mansfield; and all the local secretaries.

Mr. BROT, the travelling agent to the society, seconded the resolution in a lengthy and eloquent speech, in which he urged various reasons why they should support the association, and replied to various objections which had been urged against it. He enlarged upon the benevolent objects which it contemplated in the making provision for the members in times of sickness or distress, showed the advantages it would afford for the education of the children of the members, and expatiated on the advantages which they would derive in a business point of view from joining the association.

The resolution was adopted.

Mr. OAKLAND moved the next resolution, defining the duties of the local secretaries to be to promote the prosperity of the society in their respective districts, by soliciting contributions for the benevolent fund from wholesale houses and manufacturers interested in the trade, and by procuring new members; to collect the members' subscriptions and remit them to the secretary of the institution in London; and to represent their districts on committee.

Mr. PATCHITT seconded the motion, which was agreed to.

Mr. SQUIRE then moved a vote of thanks to the mayor, for his kindness in granting the use of the room, which was seconded by Mr. LEWIS, and carried by acclamation.

On the motion of Mr. BROT, seconded by Mr. BASS, a vote of thanks was passed to the chairman for presiding, and the compliment having been acknowledged, the meeting separated.

UNITED SOCIETY OF CHEMISTS AND DRUGGISTS.—We understand that the Committee of the United Society of Chemists and Druggists intend commemorating the first anniversary of the Society by a Public Dinner of the members and friends on or about the 25th January next; further particulars will, no doubt, be given in our next number. This Society has

been actively engaged in canvassing the Midland Counties, and the proceedings of a public meeting, recently held at the Town-hall, Nottingham, will be found in another portion of our columns, John Hedderley, Esq. being appointed Chairman of the district. Since our last, another meeting of the Lancashire district of this Society has been held at the Town-hall, Manchester, when His Worship the Mayor of Manchester, Mr. Alderman Bowker, and Thomas Gilks Gibbons, Esq., were unanimously elected Vice-Presidents of the Society.

EXPLOSION IN BIRMINGHAM.—A terrific explosion took place on Saturday evening last, on the premises of Mr. Barnett, grocer and druggist, in Smithfield, Birmingham. Shortly after ten o'clock one of the assistants went into the cellar for some article, and shortly after his return a fearful explosion took place. The whole of the fittings of the shop were blown into the street, and several persons in the shop injured. The origin of the explosion is said to have been the ignition of paraffin.

THE EXPORTATION OF SALTPETRE.—From private letters received in Liverpool from America, it would appear that the Cabinet at Washington had anticipated long ago a prohibition against the export of saltpetre from England; for while the exports from British ports for several months past have been very large, the Federal Government did not confine themselves to these supplies, but have also been in the receipt of immense quantities of this article from the East Indies. Indeed, the writer of one of the letters alluded to, though he could not possibly be aware of "the Order in Council" against the export of saltpetre, says the amount of saltpetre received in Boston, New York, and Philadelphia, on Government account from the East, is sufficient for many years. Three vessels monthly arrived in Boston from the East Indies, having on board 1,198 tons of saltpetre. "One of the officials connected with the Collector's office," adds the writer, "informed me that there was sufficient saltpetre in the Boston dépôt to last for seven years, while the arsenals were full." It will thus be seen that the Washington Government have not been neglectful of procuring supplies of this most valuable of all articles in the manufacture of gunpowder.

REPUTED SPECIFIC FOR SMALL-POX.—At the last meeting of the Epidemiological Society, a communication was read from Mr. Herbert Miles, Assistant-Surgeon to the Royal Artillery, respecting a plant that was stated to be a specific for small-pox. The remedy is given in the form of a strong infusion of the rhizome, and Mr. Miles had, after very considerable difficulty, succeeded in obtaining a small supply of the plant, which he had forwarded to the Society. Mr. Miles is quartered in Canada, where an epidemic of small-pox having broken out among the Indians, the disease had proved virulent in the extreme among the unprotected, because unvaccinated, natives. However, the alarm had greatly diminished on an old squaw going amongst them, and treating the cases with the infusion. This treatment, it is said, was so successful as to cure every case. The Secretary of the Society, Dr. McWilliam, C.B., had sent specimens of the plant to Dr. Hooker, of Kew, who pronounced it to be the *Sarracenia purpurea*, one of the pitcher plants of North America. Mr. Marson, of the Small-pox Hospital, has kindly undertaken to give the so-called remedy a trial.



PARIS.

(FROM OUR OWN CORRESPONDENT.)

December 7th, 1861.

The official report on the imports of the month of October exhibits the following changes deserving of notice:—There was an import of 2418 tons of dye woods of various kinds, but, as in former years, this article was not distinguished from other woods, there are no direct means of telling whether the demand is on the increase or no, but the growing consumption of other articles used in dyeing leaves little doubt on the question.

The arrivals of cochineal were very small, and the amount taken into consumption still less. Indigo exhibits a large increase in supply, but a great decrease in consumption.

The demand for oil seeds seems enormous, there were 5454 tons of linseed, 1782 of sesame, and 5922 tons of other kinds, not distinguished, imported during the month, and about an equal quantity cleared for consumption. Oils are equally sought after; the import of seed oils continues to augment at a rapid rate; in October, 1859, it was 561 tons, last year 1474, and this year 1774 tons; olive oil, too, seems to be growing more plentiful, the quantities being 798, 1121, and 1861 respectively; the clearances of the month are in excess of the imports.

Hops, on the other hand, seem to have sustained a check, as the amount imported and cleared are about 50 per cent. less than they were in the same month of last year.

The nitrates exhibit a remarkable result; nitrate of potash, of which 500 and odd tons were cleared in October, 1859, fell to 54 last year, but rose again last month to 129 tons, while the import of nitrate of soda rose from next to nothing to 1074 tons in the month, and the whole of the latter quantity was taken for consumption. Sulphur was in great demand, there having been 3669 tons imported during the month, against 2565 last year, and 2742 tons in 1859, and the whole was taken into consumption.

Unfortunately we have not yet any detailed account of English drugs and chemicals imported into France, but we have that of the exports from the latter to the former. The official returns are made at intervals of ten days, and the figures will exhibit the tendency of the markets, while the port of reception will, in most cases, indicate the destination:—

Marseilles to London—

	30th Oct.	10th Nov.	20th Nov.
Medicinal Roots	tons 1	—	—
Sulphur	13	—	—

Marseilles to Liverpool—

Medicinal Roots	4	—	—
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Marseilles to Malta—

Soap (ordinary)	—	5	—
Sulphuric Acid	1½	—	—
Stearic Acid (worked)	2	—	—

Bordeaux to London—

Pitch, Tar, and Resins	—	30	193
Turpentine	—	16	71
Tartaric Acid	—	—	5
Cream of Tartar	—	2½	2
Olive Oil	—	—	2½
Essential Oils	—	—	½
Verdigris, dry	—	1	—
Cochineal	—	6½	—
Gums, pure exotic	—	—	2
Indigo	—	4	2
Perfumery	—	—	2
Medicines compounded	—	—	2

Bordeaux to Liverpool—

Pitch and Resins	220	470	—
Pure Exotic Gums	—	18½	—
Turpentine	—	24	—
Ditto in mass	—	5	—
Tar and Oil Resins	—	389½	—
Spanish Liquorice	—	2	—
Madder, dry roots	—	37	—
Ditto, ground	—	47	—
Ditto, extract	—	28	—
Tartar, in crystals	—	1	—
Verdigris, dry	—	½	—
Armatto	—	5	—

Bordeaux to Madras—

Perfumery	—	—	2
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Bordeaux to Dublin—

Madder (extract)	—	7	—
Cream of Tartar	—	1½	—

Bordeaux to Glasgow—

Pure Exotic Gums	—	16	—
Cream of Tartar	—	—	½

Rouen to Dublin—

Sulphate of Iron	—	10	—
Alum	25	8½	—

Rouen to Glasgow—

Alum	13	—	—
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Rouen to London—

Bitumen, solid, pure	—	120	—
Sulphate of Iron	—	7½	18½

Rouen to Newcastle—

Sulphate of Iron	—	25	—
Alum	—	½	—

Rouen to Hull—

Arces	—	—	38½
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Boulogne to London—

Perfumery	5	4	3
Stearic Acid (worked)	—	1	—
Indigo	—	—	1
Carmine, common	—	—	1½

Dunkirk to London—

Sulphate of Iron	—	16	—
Medicines compounded	—	4 cwt.	—

Dunkirk to Hull—

	30th Oct.	10th Nov.	20th Nov.
Madder tons.	6½	—	44
Paris to Mauritius—			
Perfumery	—	—	1½
Bayonne to Liverpool—			
Turpentine	—	—	18½
Tar, dry, Rosin, &c.	—	—	102
Bayonne to London—			
Turpentine.....	—	—	34

To the Editor of the "Chemist and Druggist."

UNG. HYD. FORT.

Leeds, Nov. 6th, 1861.

Sir,—Having bought a quantity of Ung. Hyd. from a city wholesale house, the appearance of which not being satisfactory, I was induced to examine minutely, not only my own, but other samples selected from the stocks of respectable chemists

In the first analysis, I proceeded by dissolving and separating the fat, afterwards boiling the mercury in a solution of liq. potass, reduced, until the mercury formed one globule. Not satisfied with the results, I afterwards adopted the plan to oxidize and dissolve the mercury, and, after separating it thus from the fat, to precipitate it with protochloride of tin. The results obtained by the two modes varied, but only in a minor degree. The last I believe to be the most truthful.

No. 1, my own, contained 43·7 per cent.

2 contained.....	45	"
3 "	47·5	"
4 "	18	"
5 "	49·2	"
6 "	45	"
7 "	47·4	"
8 "	46·2	"
9 "	41	"
10 "	42·7	"
11 "	42·5	"

No. 4 is a bad sample, and ought not, perhaps, to be given, but as it was obtained as a

genuine P. L. Ung., I include it. A slight quantity of antimony was used to give colour.

If you think the above statement worthy your notice for publication in your forthcoming number, I have great pleasure in forwarding it, believing that it will be a slight incentive to druggists to examine more carefully articles bought from first-class houses. I have omitted names, but they are at your service if you require them.

I am, Sir, yours truly,
R. M. ATKINSON.

JEFFREY'S RESPIRATORS.

6th December, 1861.

Sir,—As Jeffrey's Respirators are sometimes returned to the wholesale houses after the cases have been opened and the seals broken, it may be advantageous that all who sell them should be made acquainted with the fact, that no credit is given for such opened respirators, neither will they receive them at the Depot, in order that patients may be satisfied that no respirator has been tried or used by a consumptive or other person.

It was suggested that the words, "All the respirators are sold in sealed packets, and no instrument can be exchanged if the seals are broken," now appearing only on the invoices, should be added also upon the outside labels.

Though this was pronounced worthy of attention, as yet we find it has not been done.

We are, Sir, your obedient servants,

FRANCIS NEWBERY AND SONS.



GENERAL NOTE.—Our readers may have remarked the absence of any scraps of general news under the head of "The Month," and some other usual features in the present number. In carrying out our intention of completing the serials on Analysis and Photographic Chemicals in the volume we have been obliged to omit many items of intelligence, and we are quite sure our readers will be pleased to find their bound volume complete in itself. In consequence of the length of many other articles of equal importance we must now crave the patience of our querists, referring them to the paragraph in our Leader entitled "Retrospective and Prospective," relating to this department of Notes and Queries.

A Correspondent will feel obliged to any one who will inform him where the new stimulant Cocos can be obtained.

TRADE REPORT.

London, 13th December, 1861.

ALTHOUGH business has been very limited during the past month, the demand for money has improved, and the bill brokers are getting about $\frac{1}{2}$ per cent. more, first-class paper in Lombard-street now being $2\frac{1}{2}$ to 3 per cent. The American advices are rather more peaceful, which has caused the funds to improve; and general opinion is, that an ample apology will be made and the men given up. Consols at one time went down to $89\frac{1}{2}$ to $90\frac{1}{2}$, and finally closed this evening at $90\frac{1}{2}$ to $\frac{1}{2}$ ex. div. for money and the account.

The market for chemicals has been flat, buyers taking only small lots for their immediate wants, and, in some cases, further reduced prices are accepted. A few small sales of discoloured tartaric acid to be made at $1s. 7\frac{1}{2}d.$, and good at $1s. 8\frac{1}{2}d.$ to $1s. 8\frac{1}{2}d.$ Iodine remains dull at $4\frac{1}{2}d.$ to $5d.$, and a few kegs damp seconds sold at $4\frac{1}{2}d.$ Citric acid is quiet at $1s. 8\frac{1}{2}d.$ to $1s. 9d.$ More doing in oxalic acid at $8\frac{1}{2}d.$ to $9d.$, and superior up to $10d.$ Small sales made in prussiate of potass at $12\frac{1}{2}d.$ to $12\frac{3}{4}d.$ Sal acetos quiet at $10\frac{1}{2}d.$ to $10\frac{1}{2}d.$ Soda ash is dull at $2d.$ Bichromate dull at $8\frac{1}{2}d.$ to $8\frac{3}{4}d.$ Some large sales have been made in flour of sulphur at $15s.$; now more money is asked. Cream of tartar is dull at $125s.$ to $127s. 6d.$ Soda crystals dull at $4l. 5s.$ ex ship. More doing in sulphate of ammonia at $13s. 6d.$ to $14s. 6d.$ Sulphate of copper $34s. 6d.$ to $36s.$ A few lots sal ammoniac, firsts, sold at $32s. 6d.$ Linsced oil is dull, and is now $34s. 3d.$ to $34s. 6d.$ Ashes are dearer, Canada pot and pearl are $39s.$ Turpentine has fluctuated from $70s.$ to $60s.$; it is now steady at $66s. 6d.$ for American.

In drugs few sales have been made. Castor oil is about $\frac{1}{2}d.$ dearer. A good business is doing in aniseed oil at $6s. 4\frac{1}{2}d.$ on the spot. Sales to be made in oil Cassia at $9s.$ Balsam copaiba, $1s. 8d.$, and Peru $4s. 8d.$ Ipecacuanha is held firmly for $7s.$ Jalap is quiet at $4s. 2d.$ to $4s. 4d.$ A few lots of Jamaica sarsaparilla sold at $1s. 6d.$ to $2s.$, being rather lower. Cape aloes are $2s.$ to $3s.$ cheaper. Gums are without change. Cardamoms are quieter. Turkey opium is held for $15s.$ to $16s.$ for fine. No change in barks. Shellac is $5s.$ to $10s.$ lower. Sales in camphor were made at $185s.$ to $187s. 6d.$ A lot of ordinary cubebs sold at $6l. 15s.$ No change in other goods.

PRICE CURRENT.

These quotations are the latest for ACTUAL SALES in Mincing Lane. It will be necessary for our retail subscribers to bear in mind that they cannot, as a rule, purchase at the prices quoted, inasmuch as these are the CASH PRICES IN BULK. They will, however, be able to form a tolerably correct idea of what they ought to pay.

	1861.				1860.			
	s.	d.	s.	d.	s.	d.	s.	d.
ARGOL, Cape..per cwt.	57	6.107	0	98	0.103	0		
French	60	0.85	0	60	0.85	0		
Oporto, white	0	0.0	0	0	0.0	0		
red	45	0.0	0	50	0.52	0		
Sicily	63	0.80	0	85	0.92	6		
Naples, white	65	0.80	0	85	0.90	0		
red	0	0.0	0	0	0.0	0		
Florence, white	91	0.100	0	95	0.105	0		
red	85	0.87	6	90	0.97	6		
Bologna, white	115	0.120	0	125	0.130	0		
ARROWROOT,								
duty $4\frac{1}{2}d.$ per cwt.								
Bermuda	0	10.1	4	1	1.1	5		
St. Vincent	0	3.0	0	0	2.2	0	6	
Jamaica	0	2.2	0	4	2.4	0	4	
Other West India ..	0	2.0	0	3	2.0	0	3	
Brazil	0	1.0	0	2	1.1	0	2	
East India	0	1.3	0	2	1.4	0	2	
Natal	0	2.2	0	7	3	0	7	
Sierra Leone	0	2.2	0	3	2.2	0	3	
ASHES.....per cwt.								
Pot, Canada, 1st sort	39	0.0	0	30	6.0	0		
U. S., 1st sort	0	0.0	0	0	0.0	0		
Pearl, Canada, 1st sort	30	0.0	0	31	0.0	0		
U. S., 1st sort	0	0.0	0	0	0.0	0		
BRIMSTONE,								
rough	£8	0.0	8	10	£10	0.0	0	
roll	13	10.14	0	14	10.0	0		
flour	15	0.16	0	10	10.17	0		
CAPERS,								
French.....per cwt.	£3	0.0	£5	0	£3	0.0	£5	0
CHEMICALS								
Acid—Acetic, per lb.	0	3.0	0	4	0	4.0	0	4
Citric	1	8.0	1	9	1	11.0	0	0
Nitric	0	3.0	0	4	0	5.0	0	5
Oxalic	0	8.0	0	10	0	8.0	0	0
Sulphuric	0	0.0	0	1	0	0.0	0	1
Tartaric, crystal	1	8.0	1	8	2	0.0	0	0
powdered	1	9.0	0	0	2	1.0	0	0
Alum	£6	15	£0	0	£6	10	£6	15
powder	7	10.0	0	0	7	10.0	0	0
Ammonia, Carbon, lb.	0s.	5.0	d.	0	0s.	6.0	d.	0
	£ s.	£ s.			£ s.	£ s.		
Sulphate ..per ton	13	10.14	10	13	10.14	10		
Antimony, ore.....	0	0.0	0	0	10	0.17	0	
crude, per cwt.....	26s.	0d.	28s.	0d	32s.	0d.	42s.	0
regulus	50	0.51	0	50	0.51	6		
French star	48	0.0	0	51	0.0	0		
Arsenic, lump	17	6.18	6	17	0.0	0		
powder	8	6.10	0	10	0.0	0		
Bleaching Powder ..	8	6.9	6	10	0.10	6		
Borax, E. I. refined..	0	0.0	0	0	0.0	0		
British	65	0.0	0	65	0.0	0		
Brimstone, roll.....	13	10.14	0	14	0.0	0		
flour	15	0.16	0	16	10.17	0		
Calomel	2	10.0	0	2	10.0	0		
Camphor, refined ..	2	3.0	2	2	3.0	0		
Copperas, green, pr tn.	62	6.65	0	65	0.0	0		
Craus, Sublimite, lb.	1	11.0	2	2	0.0	0		
Green, Emerald, pr lb.	0	9.0	11	0	9.0	1	0	
Brunswick, cwt.....	14	0.42	0	14	0.42	0		
Iodine, dry ..per oz.	0	4.0	0	5	0.0	5		
Ivory Blk. drop pr. ct.	8	0.0	9	0	0.0	0	4	

PRICE CURRENT—continued.

1861.				1860.				1861.				1860.			
CHEMICALS.				s. d. v. d.				s. d. s. d.				s. d. s. d.			
Magnesia, Carbon. ct.	42	6.45	0	42	6.45	0		La Guayra	70	0.78	0	62	0.78	0	
Calced, lb.....	1	6.0	0	1	6.0	0		Costa Rica, mid. to f.	70	0.87	0	68	0.82	0	
Minium, red, per cwt.	22	6.23	0	23	6.0	0		good and f. ord.	67	0.69	0	62	0.68	0	
orange	35	0.0	0	34	0.0	0		Cuba, mid. to fine ..	72	0.85	0	68	0.82	0	
Potash, Bichrom., lb.	0	8 1/2	0 8 1/2	0	10 1/2	0 10 1/2		f. ord. & f. f. ord.	67	0.70	0	57	0.62	0	
Chlorate.....	0	10 1/2	0 10 1/2	0	10 1/2	0 11		ord. & good ord.	64	0.67	0	60	0.78	0	
Hydriodate ..oz.	0	5 1/2	0 5 1/2	0	5 1/2	0 6		Porto Rico	66	0.78	0	58	0.65	0	
Prussiate ..lb.	1	0 1/4	0 1/4	1	2 1/2	0 0		St. Domingo	60	0.60	0				
red.....	2	2	0 0	2	3	0 0		DRUGS.							
Precipitate, red per lb.	2	9.0	2 10	2	10.0	2 11		Aloes, Hepatic, pr.cwt.	5	10.0	8	3	10.0	9 10	
white.....	2	10.0	0 0	2	10.0	0 0		Socotrine	8	0.24	0	5	0.24	10	
Prussian Blue	1	6.0	1 10	1	6.0	1 10		Cape, good.....	2	0.0	2	2	0.0	2	
Rose Pink ..per cwt.	20	0.30	0	20	0.30	0		inferior	1	0.0	1 16	1	8.0	2	
Sal-Acetos....per lb.	6	10 1/2	0 11	0	10.0	0 0		Barbadoes.....	3	0.21	0	2	0.23	10	
Ammoniac, cwt.								Ambergris, gray, poz.	35s.	0d. 38s.	0d.	35s.	0d. 42s.	0d.	
British	32	6.33	0	32	6.33	6		Angelica Root, pr.cwt.	20	0.35	0	35	0.42	0	
Epsom	8	0.8	6	8	3.8	6		Aniseed, China star.	60	0.75	0	70	0.80	0	
Glauber	3	9.0	6	5	0.5	6		German, &c.	22	0.42	0	32	0.46	6	
Saltpetre, refined ..	45	0.46	0	43	0.44	6		Balsam, Canada, pr.lb.	1	3.0	0	1	3.0	0	
Soda, Ash, per degree	0	2.0	0	0	2 1/2	0 2 1/2		Capivi	1	8.0	1	2	1.2	2	
Bicarbonate ..cwt.	12	0.13	0	13	6.14	6		Peru	4	7.4	8	4	10.0	0	
Crystals....per ton	£4	15/0	£0	£4	15/0	£0		Tolu	3	4.3	7	3	8.0	3	
Sugar Lead, white, ct.	37s.	0d. 38s.	0d.	38s.	0d. 38s.	0d.		Bark, Cascarilla, cwt.	25	0.49	0	25	0.49	0	
brown.....	27	6.28	0	28	0.0	0		Peru, crwn. & gry. pr.lb.	1	2.2	6	1	7.0	3	
Sulphate Quinine, oz.								Calisaya, fat	3	6.3	3	5	3.5	6	
British in bottle ..	0	6.0	6 7	8	2.8	6		quill	3	4.3	6	1	2.2	3	
Foreign	5	9.0	0	7	6.7	9		Carthagea	0	10.0	2	1	2.2	0	
Sulphate Zinc ..cwt.	14	6.15	0	14	6.15	0		Pitayo	1	6.2	2	1	6.2	3	
Verdigris	1	3.0	1 5	1	3.0	1 5		Red	2	0.6	0	2	2.6	0	
Vermillion, English..	3	0.0	3 4	3	0.0	3 4		Bay Berries, per cwt.	22	0.40	0	22	0.40	0	
China.....	2	0.0	2 3	2	11.0	3 0		Borax	18	0.50	0	20	0.37	6	
Vitriol, blue or Roman								Tinical	20	0.50	0	30	0.60	0	
per cwt.....	35	0.36	0	33	6.34	6		Bucca Leaves ..lb.	0	3.1	3	0	5.1	6	
CHICORY....per cwt.								Burgundy Pitch, p.cwt.	0	9.0	0	0	0.0	0	
Foreign (duty, 6s.)	17	6.13	0	13	0.13	6		Camomile Flowers..	40	0.91	0	95	0.140	0	
COCHINEAL...per lb.								Campbor, China....	185	0.187	6	170	0.175	0	
Honduras, black....	2	10.0	4 8	3	0.5	2		Canella Alba.....	19	0.40	0	25	0.46	0	
silver	2	4.0	3 6	3	0.0	3 6		Cuntharides ..per lb.	2	0.0	2	2	7.0	2	
pasty	1	6.0	2 3	2	3.0	2 10		Carduus. Mlbr. good	4	10.0	5	4	7.0	4	
Mexican, black....	2	6.0	3 0	3	2.0	3		inferior	3	10.0	4	2	2.0	4	
silver.....	2	3.0	2 6	2	10.0	3 1		Madras	3	4.0	4	2	0.0	4	
Lima	2	7.0	3 2	3	0.0	3 9		Ceylon	4	0.0	4	3	6.0	3	
Teneriffe, black ..	2	8.0	3 1	3	4.0	3 3		Cassia Fistula, pr.cwt.	13	0.23	0	28	0.38	0	
silver	2	7.0	2 9	2	10.0	3 2		Castor Oil, 1st pale, lb.	0	6 1/2	0	6	6.0	0 1/2	
COCOA (duty 1d. per lb.)								second	0	5 1/2	0	5	5.0	0 1/2	
Trinidad, red, in								infr. and dark ..	0	4 1/2	0	4	4.0	0 1/2	
bond.....per cwt.	66	0.101	0	70	0.92	0		Bombay, in casks	0	4 1/2	0	5	0.0	0 1/2	
gray	10	0.65	0	64	0.68	0		Castorum	1	2.28	0	9	3.20	0	
Grenada	60	0.65	0	60	0.67	0		China Root ..per cwt.	9	0.10	0	9	0.10	0	
Dominica & St. Lucia	58	0.62	0	58	0.62	0		Coculus Indicus ..	15	0.0	0	15	0.16	0	
Para	64	0.66	0	64	0.66	0		Cod-liver Oil, per gal.	5	0.6	4	4	0.6	9	
Bahia	55	0.57	0	56	0.59	0		Colocynth, apple, p.lb.	0	8.0	1 2	0	11.0	1	
Guayaquil	63	0.65	0	68	0.70	0		Colombo Root, per cwt.	15	0.47	0	15	0.47	6	
COFFEE, in bond (duty								Corosus Nuts, per cwt.	13	0.23	6	15	0.27	6	
3d. per lb.)								Cream Tartar, per cwt.							
Jamaica, good, mid.								French	122	6 127	6	137	6.0	0	
to f.....	80	0.100	0	72	0.96	0		Venetian	125	0.180	0	140	0.0	0	
low mid. & mid.	74	0.78	0	65	0.70	0		gray	115	0.120	0	125	0.127	6	
fine ordinary	68	0.72	0	62	0.64	0		brown	103	0.110	0	118	0.120	0	
good ordinary	66	0.67	0	59	0.61	0		Crotoln Seed.....	90	0.105	0	80	0.90	0	
ord. and triage....	50	0.65	0	46	0.59	0		Cubebs	135	0.140	0	210	0.220	0	
Ceylon, Nat. gd. & f.	68	0.71	0	61	0.64	6		Cumin Seed	52	0.56	0	30	0.32	0	
ordinary	64	0.67	0	57	0.61	0		Dividivi	12	0.14	14	12	0.13	0	
Plantation, fine....	86	0.90	0	86	0.88	0		Dragon's blood, reed.	£8	0.212	0	£7	0.214	0	
fine mid.	82	0.85	0	79	0.84	0		lump	3	10.0	0	5	5.13	0	
good mid.	79	0.81	0	75	0.78	0		Galangal Root.....	0	16.20	0	1	6.1	8	
middling	75	0.78	6	70	0.74	0		Gentian Root	0	15.0	0 17	0	16.0	0 17	
ft. ord. to low mid.	70	0.74	0	66	0.69	0		Ginger, preserved, in bd.	s. d. s. d.			s. d. s. d.			
mixed and triage	50	0.70	0	50	0.65	6		(duty 2d. lb.) per lb.	0	5.0	0 8	0	9.0	0 9 1/2	
Malabar and Mysore	68	0.90	0	57	0.78	0		Guinea Grains.							
Madras	68	0.80	0	58	0.76	0		per cwt.	50	0.52	6	43	0.50	0	
Tellcherry	70	0.100	0	64	0.89	0		Honey, Narbonne ..	60	0.85	0	70	0.95	0	
Mocha, fine	130	0.135	0	112	0.123	0		Cuba	25	0.48	0	48	0.54	0	
garbled	93	0.105	0	94	0.110	0		Jamaica	30	0.70	0	48	0.75	0	
ungarbled	68	0.100	0	62	0.88	0		Ipecacuanha, per lb.	6	0.7	0	4	6.0	4	
Batavia, yellow	74	0.78	0	65	0.78	0		Isinglass.....							
pale and mixed....	66	0.73	0	58	0.64	0		Brazil	1	0.3	10	1	10.0	4	
Sumatra	58	0.64	0	52	0.55	0		East India	0	6.0	3 2	1	8.0	4	
Padang	60	0.66	0	54	0.58	0		West India	3	0.3	6	3	9.0	4	
African	70	0.85	0	80	0.85	0		Russian, long staple	13	0.13	0	0	0.0	0	
Brazil, f. ord. & wshd.	63	0.72	0	61	0.72	0		leaf	9	0.12	0	0	0.0	0	
good ord.	56	0.62	0	57	0.60	0		Simovia.....	2	3.0	2 6	1	6.0	2 6	
ordinary	47	0.54	0	51	0.57	0		Jalap	4	6.0	4 0	4	6.0	4	

PRICE CURRENT—continued.

DRUGS.	1861.				1860.				GUM.	1861.				1860.				
	s.	d.	s.	d.	s.	d.	s.	d.		£.	s.	£.	s.	£.	s.	£.	s.	£.
Juniper Berries, p. cwt.																		
German and French 10	0..11	0			9	0..9	6			Benjamin, 2nd qual. 14	0..20	10		8	0..16	10		
Italian	10	0..12	0		9	0..10	0			3rd ..	2	10..	9	10	3	0..7	10	
Lemon Juice, per deg.	0	03..	0	1	0	03..	0			Copal, Angola red ..	5	0..	6	5	5	0..5	15	
Lichen Islandicus, lb.	0	0..0	0		0	03..	0			pale....	4	15..	5	5	4	5..	5	
Liquorice... per cwt.										Benguella	5	10..	8	0	4	15..	6	
Spanish	83	0..90	0		83	0..90	0			Sierra Leone lb.	0s.	7d.	1s.	9d	0s.	9d.	1s.	9d
Italian	85	0..95	0		85	0..95	0			Manilla, pr. ct.	14	0..40	0		15	0..43	0	
Macaroni, Genoa, p. lb.	0	3..	0	6	0	3..	0	6		Dammar, pale, pr. ct.	38	0..54	0		46	0..52	0	
Naples....	0	4..	0	5½	0	4..	0	5½			£.	s.	£.	s.	£.	s.	£.	s.
Manna, flaky	2	6..	0	0	2	6..	0	0		Galbanum.....	7	0..	8	0	7	0..	9	0
small	1	6..	1	9	2	0..	2	3		Gamboge, pkd. pipe ..	7	0..	9	0	6	0..	7	10
Musk	20	0..34	0		28	0..36	0			in sorts ..	4	0..	6	0	4	10..	5	10
Myrabolans, per cwt.	8	6..12	0		9	6..12	6			Guaiacum ...per lb.	0	7..	1	6	0	10..	1	9
Nux Vomica.....	8	0..	8	6	11	0..12	0			Kino	per cwt.100	0	140	0	95	0..120	0	
Opium, Turkey	12	0..16	0		16	6..18	6			Kowrie	18	0..23	0		20	0..24	0	
Egyptian....	6	0..12	6		6	0..13	0			Mastic, pkd., per lb.	6	6..	7	6	8	6..	9	6
Orris Root... per cwt.	27	0..29	0		23	0..31	0			Myrrh, gd. & fl., pr. ct.	140	0	180	0	160	0	200	0
Pulitory Root	0	0..	0	0	0	0..	0	0		in sorts.....	80	0	130	0	90	0	150	0
Pink Root... per lb.	1	10..	2	2	1	0..	1	3		Olibanum, pale drop.	60	0..66	0		60	0..66	0	
Quassia (bit. wd.) ton	£3	10..	4	0	£3	15	£4	0		amber & yellow 40	0..54	0		40	0..54	0		
Rhatania Root . p lb.	0s.	10d.	1s.	0d	0s.	6d.	1s.	2d		mixed & dark ..	10	0..26	0		12	0..26	0	
Rhubarb, China, rnd.	0	9..	2	9	1	0..	2	9		Senegal	40	0..46	0		34	0..38	0	
flat... ..	1	0..	2	9	1	2..	3	0		Sandrac	75	0	105	0	90	0	110	0
Dutch, trimd.	3	0..	3	6	3	3..	3	6		Tragacanth, leaf	180	0	340	0	190	0	340	0
Russian	11	6..	0		13	6..14	6			in sorts.100	0	130	0	100	0	126	0	
Saffron, Spanish	54	0..57	0		54	0..56	0			LAO DYE, per lb. D. T.	1	9..	1	10	1	10½.	1	11
Salep..... per cwt.	£9	0s.	£9	10	£12	0	£14	0		B Mirzapore.....	1	6..	1	7	1	7..	1	8
Sarsaparilla, Lima...	0s.	11d.	1s.	4d	0s.	10d..	1s.	2d		Other good and fine..	1	0..	2	4	1	2..	2	3
Para	0	10..	1	3	0	10..	1	2		Ord. & Native marks	0	1½.	0	10	0	2..	0	11
Honduras	0	11..	1	6	0	11..	1	6		OILS.....								
Jamaica	1	3..	2	3	1	3..	2	6		Seal, pale	40	0..41	0		39	0..40	0	
Sassafras... per cwt.	10	0..13	0		10	0..12	0			yellow	35	0..37	0		33	10..35	0	
Scammony .. per lb.										brown	33	0..	0		32	10..33	0	
virgin	28	0..35	0		28	0..34	0			Sperm, body	88	0..	90	0	100	0	102	0
second	14	0..24	0		14	0..24	0			headmater	88	0..	0		102	0	104	0
Seedlac	60	0	100	0	48	0..70	0			Cod	40	0..41	0		37	0..38	0	
Seneka Root.....	2	2..	2	4	2	2..	0	0		Whale, Greenland ..	0	0..	0	0	0	0..	0	0
Senna, Calcutta	0	1½.	0	2½	0	2..	0	2½		South Sea, pale 35	10..36	0		36	10..38	0		
Bombay	0	2..	0	3	0	2½.	0	4		yellow 34	10..	0		34	0..35	0		
Tinnevely	0	2..	1	2	0	3..	0	8		brown 34	0..32	0		33	0..	0	0	
Alexandria	0	4..	0	6½	0	3..	0	7		E. I. Fish 30	10..32	10		29	10..30	10		
Shellac, orange, pr. ct.	160	0	180	0	230	0..260	0			Olive, Galipoli .. tun	60	0..61	0		60	0..	0	0
liver & garnet. 150	0	170	0		210	0..220	0			Trieste	59	0..	0		58	0..	0	0
block	120	0	150	0	205	0..210	0			Levant	57	0..58	0		56	0..57	0	
bttn. dk. to mid. 110	0	120	0		205	0..210	0			Mogadore	55	10..	0		55	10..	0	0
good and fine. 135	0	160	0		215	0..225	0			Spanish	59	0..60	0		60	0..	0	0
Sneke Root	1	8..	1	9	1	2..	1	3		Sicily	57	10..58	0		57	10..58	10	
Spermaceti, refined..	1	0..	1	1	1	6..	0	0		Florence, pr. j. chst.	1	0..	1	2	0	16..	0	0
Squills	0	1..	0	0	0	1..	0	3		Cocoonut, Cochintun	50	0..51	0		55	0..56	0	
Sticklac	90	0..120	0		60	0..90	0			Ceylon	49	0..50	0		53	10..54	0	
Tamarinds, E. India.	10	0..12	0		7	6..12	0			Sydney ..	40	0..49	49		49	0..52	10	
W.I. per cwt.	15	0..32	0		16	0..35	0			Ground Nut and Gin.								
Terra Japonica,										Bombay.....	41	15..42	10		41	0..	0	0
Gambier... per cwt.	17	3..18	0		17	0..17	3			Madras	44	0..45	0		43	0..44	0	
Cutch	23	0..24	6		25	0..25	6			Palm, fine	45	0..45	10		46	0..47	0	
Valerian Root, Engl.	20	0..40	0		20	0..40	0			Palm Nut	39	0..41	0		40	0..42	0	
Vanilla,										Linseed	34	3..34	6		29	10..	0	0
Mexican .. per lb.	20	0..50	0		35	0..75	0			Rapeseed, Engl. pale.	45	0..	0		43	10..	0	0
Brazil	0	0..	0	0	0	0..	0	0		brown	43	0..	0		41	0..41	10	
Wormseed .. per cwt.	2	0..10	0		1	0..	0	0		Foreign do.	46	0..47	0		45	0..44	0	
FARINA, Scotch	20	0..25	0		16	0..16	6			brown	43	0..	0		41	10..42	0	
GUM										Lard	55	0..	0		62	0..03	0	
Ammoniac, drop	3	10..	5	5	2	15..	5	0		Tallow	40	0..	0		32	10..	0	0
lump....	0	15..	0	0	0	15..	2	0		Rosin	0	0..	0		7	5..	0	0
Animi, fine pale	15	0..16	0		15	0..16	0			OILS, Essential;								
bold amber	13	0..14	0		13	0..14	0			Almond, essenc. pr. lb.	19	0..	0		30	0..31	0	
medium	8	10..11	0		8	10..11	0			expressed..	0	0..	0		1	0..	0	0
small & dark	5	0..	8	5	5	0..	8	0		Aniseed	6	4½.	6	6	7	2..	0	0
ordinary dark	2	10..	5	0	2	10..	5	0		Bay..... per cwt.	0	0..	0		122	6..	0	0
Arabic, E.I.f. pale pickd	2	10..	217	2	2	13..	3	3		Bergamott... per lb.	6	6..14	0		6	6..14	0	
unsorted, good to f.	1	14..	215	1	18..	2	10			Cajuputa, bond, pr. oz.	0	1½.	0	1½	0	1..	0	1½
red and mixed	1	0..	110	1	8..	1	10			Caraway ... per lb.	4	3..	6	0	4	3..	6	0
siftings	0	0..	0	0	0	18..	1	3		Cassia.....	0	9..	3	3	10	6..10	9	
Turkey, pkd. gd. to fl.	5	5..	7	5	5	10..	7	10		Cinnamon(Inb.) p. oz.	1	0..	3	10	3	0..	4	3
second & infr.	2	0..	5	0	2	5..	5	5		Cinnamon Leaf ..	2	0..	4	0	1	0..	2½	
in sorts	1	10..	2	0	1	10..	2	3		Citronel	0	4½.	0	5	0	4½.	0	4½
Gedda	1	4..	1	6	1	6..	1	7		Clove.....	0	4..	0	0	0	2½.	0	3½
Barbary, white.....	1	10..	1	13	1	10..	1	12		Croton	0	3..	0	4	0	4½.	0	4½
brown	1	7..	1	8	1	10..	1	11		Juniper	per lb.	1	10..	4	0	1	10..	4
Cape	0	16..	0	18	0	16..	0	18		Lavender	2	6..	5	2	6..	5	0	0
Assafetida, fair to gd.	1	10..	5	0	1	0..	4	5		Lemon	5	0..10	6	5	0	10..	0	0
Benjamin, first qual.	20	0..33	0		18	0..34	0			Lemongrass... per oz.	0	5..	0	6	0	5..	0	6

PRICE CURRENT—continued.

	1861.			1860.			1861.				1860.			
	s.	d.	s. d.	s.	d.	s. d.	s.	d.	s. d.	s. d.	s.	d.	s. d.	s. d.
OILS, Essential,														
Mace, ex	0	1	0 2	0	2	0 2	0	2	0	2	0	2	0	2
Neroli	6	0	9 0	6	0	9 0	0	4	0	4	0	4	0	4
Nutmeg	0	1	0 2	0	2	0 2	0	4	0	4	0	4	0	4
Orange	6	6	7 0	10	2	11 0	0	3	0	3	0	3	0	3
Otto Roses	16	0	25 0	16	0	26 0	0	3	0	3	0	3	0	3
Peppermint	7	6	14 0	7	6	15 6	0	10	0	10	0	10	0	10
American	33	0	88 0	24	6	30 0	0	6	0	6	0	6	0	6
English	3	9	6 0	3	9	6 0	0	6	0	6	0	6	0	6
Rhodium	1	10	3 0	1	10	3 0	0	6	0	6	0	6	0	6
Rosemary	3	6	4 6	3	6	4 6	0	6	0	6	0	6	0	6
Sassafras	5	0	12 6	5	0	12 6	0	6	0	6	0	6	0	6
Spearmint	1	3	1 6	1	3	1 6	0	6	0	6	0	6	0	6
Spike	1	9	2 6	1	9	2 9	0	6	0	6	0	6	0	6
Thyme	7	0	0 0	6	0	6 3	0	6	0	6	0	6	0	6
PITCH, British, pr. cwt.	10	6	0 0	10	3	0 0	0	6	0	6	0	6	0	6
Swedish	42	0	42 6	41	6	43 0	0	7	0	7	0	7	0	7
SALTPETRE, per cwt.														
Bengal, p.c. or under	39	6	41 6	38	0	41 6	0	9	0	9	0	9	0	9
over 6 per cent.	39	6	41 6	38	0	41 6	0	9	0	9	0	9	0	9
Madras	38	0	40 0	38	0	40 0	0	9	0	9	0	9	0	9
Bombay	36	0	40 0	38	0	40 0	0	9	0	9	0	9	0	9
British-refined	45	0	46 0	42	6	44 0	0	9	0	9	0	9	0	9
Nitrate of Soda	13	6	14 6	13	6	13 6	0	9	0	9	0	9	0	9
SEED, Canary	50	0	62 0	52	0	60 0	0	9	0	9	0	9	0	9
Caraway, English, p.c.	23	0	25 0	28	0	30 0	0	9	0	9	0	9	0	9
German, &c.	0	0	0 0	26	0	34 0	0	9	0	9	0	9	0	9
Clover, English, red ..	0	0	0 0	0	0	0 0	0	9	0	9	0	9	0	9
white	0	0	0 0	0	0	0 0	0	9	0	9	0	9	0	9
Germ. & French, red ..	0	0	0 0	0	0	0 0	0	9	0	9	0	9	0	9
white	0	0	0 0	0	0	0 0	0	9	0	9	0	9	0	9
Coriander	15	0	17 0	0	0	0 0	0	9	0	9	0	9	0	9
East India	0	0	0 0	11	0	12 0	0	9	0	9	0	9	0	9
Hemp	44	0	48 0	44	0	46 0	0	9	0	9	0	9	0	9
Linseed, English, p. q.	85	0	56 0	70	0	75 0	0	9	0	9	0	9	0	9
Black Sea and Azof ..	60	0	62 0	57	0	58 0	0	9	0	9	0	9	0	9
Calcutta	62	0	64 0	59	0	60 0	0	9	0	9	0	9	0	9
Bombay	66	0	67 0	62	6	63 0	0	9	0	9	0	9	0	9
Egyptian	58	0	60 0	54	0	56 0	0	9	0	9	0	9	0	9
St. Petersburg, Morshank	61	0	62 0	57	0	58 0	0	9	0	9	0	9	0	9
Archangel	58	0	58 0	49	0	50 0	0	9	0	9	0	9	0	9
Rice	40	0	45 0	44	0	45 0	0	9	0	9	0	9	0	9
Mustard, brown, p. bhl	6	0	13 0	0	0	0 0	0	9	0	9	0	9	0	9
white	6	0	9 0	9	0	11 0	0	9	0	9	0	9	0	9
Niger	50	0	51 0	49	0	50 0	0	9	0	9	0	9	0	9
Poppy, E.I., per qr.	53	6	60 0	39	0	60 0	0	9	0	9	0	9	0	9
Rape, English	0	0	0 0	0	0	0 0	0	9	0	9	0	9	0	9
Danube	69	0	70 0	63	6	64 0	0	9	0	9	0	9	0	9
Calcutta, fine	63	0	60 0	60	0	61 0	0	9	0	9	0	9	0	9
Bombay, Guzerat	63	0	71 0	69	0	70 0	0	9	0	9	0	9	0	9
Feroze, & Scinde	64	0	66 0	56	0	61 0	0	9	0	9	0	9	0	9
Teel, Sesame or Gnyly ..	64	0	70 0	56	0	66 0	0	9	0	9	0	9	0	9
Cotton	7	10	8 0	7	15	8 0	0	9	0	9	0	9	0	9
Gnd. Nut Kernels, tn.	340	0	345 0	330	0	340 0	0	9	0	9	0	9	0	9
SOAP, Lond. yel. p. cwt.														
mottled	21	0	36 0	21	0	38 0	0	9	0	9	0	9	0	9
curd	34	0	36 0	36	0	38 6	0	9	0	9	0	9	0	9
Castile	50	0	50 0	52	0	50 0	0	9	0	9	0	9	0	9
Marseilles	88	0	40 0	37	0	40 0	0	9	0	9	0	9	0	9
SOY, China	40	0	41 0	40	0	41 0	0	9	0	9	0	9	0	9
Japan	2	2	2 4	3	0	3 6	0	9	0	9	0	9	0	9
SPICES, duty free, except pepper.														
Cassia Ligna, p. cwt.	84	0	93 0	85	0	95 0	0	9	0	9	0	9	0	9
Vera	12	0	50 0	12	0	53 0	0	9	0	9	0	9	0	9
Buds	190	0	0 0	180	0	190 0	0	9	0	9	0	9	0	9
Cinnamon, per lb.	1	5	2 9	1	4	2 3	0	9	0	9	0	9	0	9
Ceylon, 1st quality ..	1	2	1 0	1	0	1 8	0	9	0	9	0	9	0	9
2nd ditto	0	9	1 4	0	9	1 2	0	9	0	9	0	9	0	9
3rd ditto	0	10	1 0	0	9	1 0	0	9	0	9	0	9	0	9
Tellicherry	1	1	1 3	1	0	1 4	0	9	0	9	0	9	0	9
Cloves, Penang	0	4	0 5	0	4	0 4	0	9	0	9	0	9	0	9
Amboyne	0	3	0 3	0	3	0 3	0	9	0	9	0	9	0	9
Zanzibar	0	3	0 3	0	3	0 3	0	9	0	9	0	9	0	9
Ginger	7	0	9 10	7	0	9 10	0	9	0	9	0	9	0	9
Jamaica, fine pr. cwt.	2	10	6 10	3	1	6 0	0	9	0	9	0	9	0	9
ord. to good	48	0	0 0	37	0	38 0	0	9	0	9	0	9	0	9
African	0	0	0 0	0	0	0 0	0	9	0	9	0	9	0	9
Bengal	0	0	0 0	0	0	0 0	0	9	0	9	0	9	0	9
Malabar	48	0	105 0	40	0	108 0	0	9	0	9	0	9	0	9
Cochin	1	4	1 8	1	7	2 2	0	9	0	9	0	9	0	9
Mace, 1st qty. lb.	0	8	1 2	0	10	1 6	0	9	0	9	0	9	0	9
2nd. & inf.	0	10	4 0	1	2	4 0	0	9	0	9	0	9	0	9
Nutmegs per lb.	0	10	4 0	1	2	4 0	0	9	0	9	0	9	0	9
brown Penang, &c.	0	10	2 0	1	2	2 4	0	9	0	9	0	9	0	9
limed	0	10	2 0	1	2	2 4	0	9	0	9	0	9	0	9
SPICES,														
Pepper (duty 6d. pr. lb.)	0	4	0 5	0	4	0 5	0	9	0	9	0	9	0	9
Black, in bond	0	4	0 5	0	4	0 5	0	9	0	9	0	9	0	9
Malabar	0	4	0 5	0	4	0 5	0	9	0	9	0	9	0	9
Alepee	0	3	0 4	0	3	0 4	0	9	0	9	0	9	0	9
Penang & Batavia	0	3	0 4	0	3	0 4	0	9	0	9	0	9	0	9
Singapore	0	3	0 4	0	3	0 4	0	9	0	9	0	9	0	9
White, Tellicherry	0	10	1 5	0	10	1 5	0	9	0	9	0	9	0	9
Other sorts	1	1	1 4	1	1	1 4	0	9	0	9	0	9	0	9
Cayenne	27	0	32 0	28	0	32 0	0	9	0	9	0	9	0	9
Pod, S. Leone pr. c.	80	0	92 0	76	0	91 0	0	9	0	9	0	9	0	9
Zanzibar	32	0	34 0	36	0	34 0	0	9	0	9	0	9	0	9
Long	0	3	0 3	0	3	0 3	0	9	0	9	0	9	0	9
Pimento, mid. to good ..	0	2	0 2	0	2	0 2	0	9	0	9	0	9	0	9
ordinary	20	0	24 0	20	0	24 0	0	9	0	9	0	9	0	9
SPONGE, Turk. f. pkd.	0	2	0 0	0	2	0 0	0	9	0	9	0	9	0	9
fair to good	3	0	6 0	3	0	6 0	0	9	0	9	0	9	0	9
ordinary	0	4	1 3	0	3	1 0	0	9	0	9	0	9	0	9
Bahama	0	10	1 0	0	10	1 0	0	9	0	9	0	9	0	9
TEA (duty 1s. 6d. per lb.) in bond.														
Congou, ordinary	0	9	0 11	0	9	0 11	0	9	0	9	0	9	0	9
good ordinary	1	0	1 1	1	0	1 1	0	9	0	9	0	9	0	9
but middling	1	1	1 4	1	1	1 4	0	9	0	9	0	9	0	9
blackish leaf	1	7	2 0	1	7	2 0	0	9	0	9	0	9	0	9
ditto strong	2	0	2 4	2	0	2 4	0	9	0	9	0	9	0	9



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LETTERS PATENT.

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INDIA RUBBER AND GUTTA PERCHA.

- 569 Silver, H. A., and Griffin, H., Silvertown, Essex, improvements in the manufacture of insulators, and other articles of india rubber which are required to retain a shape once given to them; in curing hard rubber, ebonite, or vulcanite goods; in moulding india rubber articles; in the construction of cellular fabrics in india rubber; and in forming articles partly of soft and partly of hard rubber, or ebonite, or vulcanite; and in varnishes for india rubber goods.
- 637 Truman, E. T., Old Burlington-street, improvements in masticators or apparatuses for preparing gutta percha, caoutchouc, and other similar substances.

MISCELLANEOUS.

- 617 Hebson, D., and Ramsden, W. G., improvements in apparatus for obtaining fresh water from salt water.
- 650 Lorberg, W., St. Mary-at-Hill, an improved process for obtaining and utilizing the chemical products of spent bark (commonly called "tan"), and all other woody fibre; also improved apparatus to be employed therefor.
- 669 Prince, A., Charing-cross, an improved electro-galvanic friction brush.
- 788 Napier, W. N., George-street, Hanover-square, improvements in the manufacture of rubbers for the human teeth and gums.
- 877 Ransome, F., Ipswich, improvements in the manufacture of artificial stone and cement or plaster, and in treating timber, for the purpose of preserving the same.
- 1019 Stevens, C., Charing-cross, a new artificial manure.
- 1076 Newton, W. E., Chancery-lane, improvements in dessiccating and torrefying farinaceous and other substances.
- 1460 Mason, J., Nottingham, a woollen article as a substitute for sponge.
- 1582 Cullen, J., Bow, improvements in preserving wood and iron.
- 1738 Barff, F. S., Dublin, a new or improved process for the induration and preservation of stone and other analogous absorbent substances or materials, which process is also applicable to the production of artificial stone.

- 1813 Jaques, J. A., and Fanshawe, J. A., Tottenham, an improved apparatus for, or mode of, stopping, plugging, or closing inkstands, bottles, and other vessels of capacity.

PROVISIONAL PATENTS.

DRUGS, CHEMICALS, ETC.

- 1732 Cobley, T., Hesse, an improved process for the manufacture of fluo-silicates and silicates of lead and baryta, and for the application of the same to various purposes in the arts and manufactures.
- 1734 Cobley, T., Hesse, an improved process for the treatment of silicates of metallic and non-metallic bases and other siliceous compounds, as slags, scoriae, and such like, in order to recover the said bases, and also in the production of a fluo-silicic and silicic acids.
- 1776 Cobley, T., Hesse, an improved process for the production or manufacture of fluo-silicates of tin, zinc, and baryta, and their application as pigments for glazing, enamelling, and in the manufacture of glass.
- 1790 Gillard, J. P., Paris, improvements in the manufacture of soda, carbonate of soda, and hydrochloric acid, and in apparatus connected therewith.
- 2196 Robertson, P., Cornhill, improvements in treating yeast, and in the manufacture of ammoniacal salts, and a substitute for animal charcoal.
- 2396 Richardson, T., Newcastle-upon-Tyne, improvements in the manufacture of muriate of iron, for the purification of coal gas.

MISCELLANEOUS.

- 1692 Jolley, R., St. John-street, an improved apparatus for heating, cooling or drying, infusing, extracting, or absorbing vapours and gases for manufacturing, medical, or domestic purposes, and for preserving liquids and solids, alimentary or otherwise.
- 1705 Mennons, M. A. F., Paris, improvements in the construction and arrangement of apparatus for the manufacture of ice, and for the refrigeration of solid and fluid masses in general.
- 1885 Robertson, J., Mile-end, improvements in apparatus for the treatment of bodily pain with hot water, steam, hot air, and the like.
- 1991 Falgas, A. F. B., Paris, improvements in the construction of trusses and bandages for hernia, and of hypo-gastric girdles or belts.